

**2010  
Bluefish Specifications,  
Environmental Assessment,  
Regulatory Impact Review,  
and  
Initial Regulatory Flexibility Analysis**



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Prepared by the  
Mid-Atlantic Fishery Management Council  
in cooperation with the  
National Marine Fisheries Service



Mid-Atlantic Fishery Management Council  
300 South New Street  
Dover, DE 19904 6790  
(302) 674 2331

## 1.0 EXECUTIVE SUMMARY

The purpose of this action is to analyze bluefish management measures for fishing year 2010 and to establish that the proposed measures will ensure that the annual fishing mortality target specified in the Bluefish Fishery Management Plan (FMP) will not be exceeded. The 2010 management measures include total annual landings (TAL), a commercial quota and annual recreational harvest limit (RHL), as well as a recreational bag limit. According to the FMP, the TAL is initially split with 17 percent going to the commercial quota and 83 percent available for recreational harvest. If recreational landings in the upcoming year are expected to be less than 83 percent of the TAL, then a "transfer" of quota can be made to increase the commercial allocation. For the 2010 bluefish fishing year, the Council reviewed a range of management alternatives and received public comments on those alternatives. Additionally, the Council took into consideration recommendations from its Science and Statistical Committee (SSC) and Bluefish Monitoring Committee.

Based on the updated estimate of bluefish stock biomass (June 2009), the bluefish stock is not considered overfished: Biomass in 2008 ( $B_{2008}$ ), estimated at 360.957 M lb (million pounds; 163,727 mt), is greater than the minimum biomass threshold = 162.096 M lb (73,525.5 mt) and is actually above the biomass target (324.192 M lb or 147,051 mt). Biomass has been above the target since 2007 and the bluefish stock is formally considered to be rebuilt. The assessment update also concluded that the Atlantic stock of bluefish is not experiencing overfishing; i.e., the fishing mortality rate in 2008 ( $F_{2008} = 0.12$ ) is less than the maximum  $F$  overfishing threshold ( $F_{\text{threshold}} = 0.19$ ) specified by the 41<sup>st</sup> stock assessment review committee (SARC-41). There are various sources of scientific uncertainty associated with the updated stock assessment. For example, the SSC noted that most of the uncertainty relates to the data used to establish the age-length key (ALK), a central source of information for developing the catch-at-age (CAA) matrix that the ASAP model attempt to replicate; the SSC also noted that fishery independent data and seine surveys do not sample this pelagic species effectively, so survey indices do not track stock abundance well. Given this scientific uncertainty, the SSC and Monitoring Committee recommended setting allowable catch (TAC) for 2010 at a level consistent with the rebuilding fishing mortality rate ( $F = 0.15$ ) rather than increasing  $F$  target to the level specified in the FMP for a recovered stock ( $90\%F_{\text{MSY}}$ ;  $F = 0.17$ ). The Council responded in kind and recommended management measures consistent with the more risk-averse target  $F$  (0.15). The various management alternatives considered by the Council are briefly characterized below. Under all of the alternatives, a status quo recreational bag limit of 15 fish would remain in place for 2010.

Alternative 1 (preferred) specifies a total allowable catch (TAC) of 34.376 M lb which is projected to achieve the rebuilding target  $F$  in 2010. Subtracting average discards for 2006-2008 (5.112 M lb) from the TAC generates a TAL of 29.264M lb. Estimated recreational landings for 2010 are 18.900 M lb (section 4.3 of the EA). Under this scenario, a transfer of quota to the commercial fishery would be allowable (see 1<sup>st</sup> paragraph) since the projected recreational landings (18.900 M lb) are less than 83 percent of the TAL (projected rec. landings are 65 percent of the TAL). The TAL under this alternative would result in an initial commercial quota

of 4.975 M lb and an RHL of 24.289 M lb. The Council recommended a transfer of 5.387 M lb; this would result in an adjusted commercial quota of 10.362 M lb and an RHL of 18.902 M lb. Adjusting these values (post transfer commercial quota and recreational harvest limit) for research set-aside (RSA<sup>1</sup>; 0.878 M lb) would result in a Council-adjusted commercial quota of 10.051 M lb and an RHL of 18.335 M lb. The Council-adjusted commercial quota under this alternative represents a 4 percent increase in available commercial landings compared to 2009 (quota = 9.696 M lb) and a 68 percent increase compared to actual 2008 commercial landings (5.977 M lb; complete 2009 landings are unavailable at this time). The Council-adjusted recreational harvest limit under this alternative represents a 6 percent decrease in available recreational landings compared to 2009 (RHL = 19.528 M lb) and a 3 percent decrease compared to actual 2008 recreational landings and projected 2010 landings (i.e., 18.900 M lb). It is important to stress that the RSA amount used to evaluate the alternatives presented in this document is the maximum RSA allowed (3 percent of the TAL) to support collaborative research projects among the public, research institutions, and NMFS. The actual RSA for fishing year 2010 will depend on the specific amounts requested by the approved research projects. NMFS will adjust quotas based on updated information on RSA, overages and/or transfers as part of the final rule that implements the 2010 specifications when the data are more complete.

It is also important to stress that projected recreational landings from 2010 were used to compare the final adjusted recreational harvest limit for 2010 to projected landings for that year and potential quota transfers from the recreational fishery to the commercial fishery. Generally, an algorithm is used to estimate recreational harvest for an upcoming year based on an assumption of constant [proportional] landings by wave in the fishery. Under this assumption, the recreational bluefish landings from the complete waves in a given year ( $L_t$ ) were divided by the proportion of total recreational landings comprised by those previous  $n$  years ( $P_{t-n}$ ). The ratio ( $L_t/P_{t-n}$ ) was used to project total recreational landings for the current year, and these landings, it was assumed, would be continued into the subsequent fishing year. The data presented to the Monitoring Committee and Council for discussion had landings data available for waves 1 and 2 of 2009. Landings for waves 1 and 2 comprised an average 3.4 percent of the total recreational landings since 2000. Therefore, it is suggested that this type of projection be postponed until more complete data are available. In the mean time, it is suggested that the recreational landings for 2008 be applied to 2010 for calculation of the recreational harvest limit as a placeholder until a projection can be made. Recreational landings in 2008 (18.900 M lb) are not radically different from average recreational landings for the past five years (section 6.1 of the EA). Note: It is possible that future update of recreational landings projections done by the NMFS (when more data is available, e.g., following wave 5 of the MRFSS data) could result in transfers different from those presented in this specifications package.

It is important to mention that despite the improvement in status stock, the Council recommended that updated projections of recreational landings be made before final rule-

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<sup>1</sup> For analysis of the alternatives in this specifications document, the research set-aside (RSA) amount deducted from each TAL is 3 percent of the TAL. See section 4.0 for further discussion.

making. These projections would allow for adjustments in any transfer of quota to the commercial fishery.

Alternative 2 would allow for the bluefish stock to be fished at 90% of  $F_{MSY}$  ( $F = 0.17$ ) as opposed to  $F_{rebuild}$  (0.15) during the rebuilding phase. A target  $F$  of 0.17 for 2010 corresponds to a TAC of 38.675 M lb and a TAL of 33.563 M lb. The TAL under this alternative would result in an initial commercial quota of 5.706 M lb and an RHL of 27.857 M lb. Under this scenario, a transfer of quota to the commercial fishery would be allowable since the projected recreational landings (18.900 M lb) are less than 83 percent of the TAL (projected rec. landings are 56 percent of the TAL). Accordingly, a transfer of 4.794 M lb would result in a commercial quota of 10.500 M lb and an RHL of 23.063 M lb. Adjusting these values for RSA (1.007 M lb) would result in a Council-adjusted commercial quota of 10.185 M lb and an RHL of 22.371 M lb. The magnitude of the quota transfer under this alternative (maximum allowable transfer) would result in slightly higher fishing opportunity for the commercial bluefish fishery when compared to 2009, therefore associated with a lower probability of revenue losses compared to Alternative 1 (preferred). Nevertheless, the Council rejected this alternative in keeping with the SSC's recommendation for a more risk-averse  $F$  target for 2010.

Alternative 3 (No Action) is considered to be synonymous with "status quo" management measures for 2010 since the alternative interpretation (failure to specify management measures) would be in gross violation of the MSFCMA. Therefore, Alternative 3 would maintain the 2009 TAL (29.356 M lb). This would result in an initial commercial quota of 4.991 M lb and an RHL of 24.366 M lb. Working backwards to calculate a TAC under status quo management measures, the revised discards estimate for 2010 (5.112 M lbs) would be added to the TAL to get 34.468 M lbs. This is slightly greater than the TAC that was specified for 2009 (34.081 M lbs) since updated discards (5.112 M lbs) are slightly greater than the value used for 2009 (4.725 M lbs).

Assuming a transfer from the recreational fishery to the commercial fishery similar to the transfer that occurred in 2009 (4.838 M lb) would result in an adjusted commercial quota of 9.829 M lb and an RHL of 19.528 M lb. Adjusting these values for RSA (0.881 M lb) would result in a Council-adjusted commercial quota to 9.534 M lb and an RHL of 18.942 M lb. The Council rejected this alternative because it would yield lower commercial fishing opportunities when compared to preferred Alternative 1. Even though the TAL under Alternative 3 is the status quo measure, the 2010 Council-adjusted bluefish commercial quota and recreational harvest limit are slightly different (lower) than the adjusted quota and recreational harvest limit implemented in 2009 mainly due to differences between the RSA amounts used to adjust the TALs between those two time periods.

#### Alternatives 4.1 and 4.2: Research Set-Aside Alternatives

Alternative 4.1 would not accommodate any RSA projects in 2010 through a deduction of the specified TAL (i.e., No Action Alternative). Alternative 4.2, however, would specify a maximum RSA of 3 percent of the bluefish TAL for 2010 (0.878, 1.007, and 0.881 M lb under quota Alternatives 1, 2, and 3, respectively). While the maximum RSA amounts were used to

analyze the commercial quotas and recreational harvest limits presented in this document, the Council-adjusted commercial quotas and recreational harvest limits will not likely constrain overall landings when compared to recent fishing activity. Furthermore, it is not expected that Alternative 4.2 would change the level of fishing effort, cause effort to be redistributed by gear type, or change the manner in which the bluefish fisheries are prosecuted. In addition, knowledge gained through the research may benefit resources and the fishery in the longer term which makes Alternative 4.2 generally more positive.

## Impacts of the Alternatives

The lowest TAL is proposed under Alternative 1 (preferred), and, as such, it would be expected that this alternative is the most risk-averse to the bluefish stock and other biological and physical resources. Additionally, the slightly higher (4 percent) commercial quota under the preferred alternative is associated with low positive impacts on commercial fishing communities. The stock is expected to increase under this alternative and it is consistent with the advice of the Council's scientific and technical advisors, the SSC and Bluefish Monitoring Committee. Alternative 2 presents a greater risk to the stock. In past analyses, no negative impacts on non-target species (including protected resources) and habitat have generally been implicated with the commercial bluefish fishery. Therefore, since No Action Alternative 3 proposes the lowest commercial quota, this alternative is the least likely to negatively affect these resources. With regard to human communities, Alternatives 1 and 2 are expected to positively affect the commercial bluefish fishery since they increase fishing opportunity as compared to Alternative 3. The magnitude of the impacts will range among individuals according to the relative importance of revenue from bluefish harvest compared to all other revenue sources and cumulatively to the degree that other revenue losses occur. Note: It is possible that future update of recreational landings projections done by the NMFS (when more data is available, e.g., following wave 5 of the MRFSS data) could result in adjustment transfers different from those presented in this specifications package. Furthermore, the actual RSA for fishing year 2010 will depend on the specific amounts requested by the approved research projects. NMFS will adjust quotas based on updated information on RSA, overages and/or transfers as part of the final rule that implements the 2010 specifications when the data are more complete.

## Cumulative Impacts

The Council analyzed the biological, habitat (EFH), protected resources, social and economic impacts of the Council-considered alternatives. When the proposed action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future fishing and non-fishing actions, it is not expected to result in any significant impacts, positive or negative; therefore, there are no significant cumulative effects associated with the action proposed in this document (section 7.5 of the EA).

Box ES-1 presents a qualitative summary of the expected direct and indirect impacts of the various alternatives. The environmental impacts of the proposed measures were analyzed and the anticipated level of significance of these impacts is discussed in accordance with the National

Environmental Policy Act (NEPA) and National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6, “Environmental Review Procedures for Implementing the National Environmental Policy Act.” This action builds on actions taken in the original Bluefish FMP, Amendment 1, and the annual specification process for the 2009 fishing year. Based on the information and analyses presented in these documents and this document, there are no significant cumulative effects associated with the proposed 2010 bluefish specifications.

**Box ES-1. Overall qualitative summary of the expected direct and indirect impacts of various alternatives considered in this document as compared to status quo. A minus sign (-) signifies an expected negative impact, a plus sign (+) signifies a positive impact, a plus/minus (+/-) is used for mixed impact, a zero is used for null impact.**

	Environmental Dimension				
	Biological	Habitat/ EFH <sup>a</sup>	Protected Resources	Economic	Social
<b>Alternative 1 (2<sup>nd</sup> Least Restrictive Commercial Quota)</b>	+	0	0	+	+/-
<b>Alternative 2 (Presumes stock is rebuilt)</b>	+	0	0	+	+
<b>Alternative 3 ( No Action, Status Quo Commercial Quota)</b>	0/+	0	0	0	0
<b>Alternative 4.1 (No RSA/No Action)</b>	0	0	0	0	0
<b>Alternative 4.2 (<i>Preferred</i>; RSA up to 3 percent of TAL)</b>	0	0	0	0	+
<sup>a</sup> If an increase in the TAL results in an increase in bottom-gear contact time, there would be a potential for a slightly higher negative impact to this VEC.					

## Conclusions

A detailed description and discussion of the expected environmental impacts resulting from each of the alternatives, as well as any cumulative impacts, considered in this specifications document are provided in section 7.0 of the EA. Alternative 1 is the Council preferred alternative because conservation requirements of the FMP would be met, while granting the most positive economic and social benefits to the human communities. None of the Council-preferred action alternatives are associated with significant impacts to the biological, social or economic, or physical environment individually or in conjunction with other actions under NEPA; therefore, a “Finding of No Significant Impact” is determined.

## 2.0 LIST OF ACRONYMS

A+B1+B2	Recreational catch from MRFSS, where A type catch is landings that were observed and measured by a MRFSS field operator and B1 is landings that were reported, but not measured. B2 is catch that was discarded (reported, and obviously not measured)
ABC	Acceptable Biological Catch
ACFCMA	Atlantic Coastal Fisheries Cooperative Management Act
ACL	Annual Catch Limits
ALK	Age-Length Key
ASAP	Age Structured Assessment Program
ASMFC	Atlantic States Marine Fisheries Commission or Commission
B	Biomass (may be used in conjunction with various subscripts, i.e., "target", "msy", etc)
BDTRP	Bottlenose Dolphin Take Reduction Plan
CAA	Catch-at-Age
CEQ	Council on Environmental Quality
CPUE	Catch Per Unit Effort
CV	Coefficient of Variance
DPS	Distinct Population Segment
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act of 1973
F	Fishing Mortality Rate (may be used in conjunction with various subscripts, i.e., "target", "msy", etc)
FR	Federal Register
FRFA	Final Regulatory Flexibility Analysis
FMP	Fishery Management Plan
GRA	Gear Restricted Area
GRT	Gross Registered Tonnage
HPTRP	Harbor Porpoise Take Reduction Plan
IRFA	Initial Regulatory Flexibility Analysis
LOF	List of Fisheries
LTPC	Long-term Potential Catch
LWTRP	Large Whale Take Reduction Plan
M	Natural Mortality Rate
MA	Mid-Atlantic
MAFMC	Mid-Atlantic Fishery Management Council
MARMAP	Marine Resources Monitoring, Assessment, and Prediction
MMPA	Marine Mammal Protection Act
MRFSS	Marine Recreational Fisheries Statistical Survey

MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
mt	metric tons
MU	Management Unit
N	Number (often associated with various subscripts)
NAO	NOAA Administrative Order
NE	New England
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NMFS	NOAA's National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OY	Optimal Yield
PBR	Potential Biological Removal
ppt	Parts Per Thousand
PRA	Paperwork Reduction Act
PREE	Preliminary Regulatory Economic Evaluation
RHL	Recreational Harvest Limit
RIR	Regulatory Impact Review
RSA	Research Set-Aside
SAFMC	South Atlantic Fishery Management Council
SARC	Stock Assessment Review Committee
SAV	Submerged Aquatic Vegetation
SAW	Stock Assessment Workshop
SMA	Small Business Administration
SSB	Spawning Stock Biomass
SSC	Science and Statistical Committee
SFA	Sustainable Fisheries Act
TAC	Total Allowable Catch
TAL	Total Allowable Landings
TED	Turtle Excluder Device
TL	Total Length
USFWS	U.S. Fish and Wildlife Service
VEC	Valuable Ecosystem Component
VMS	Vessel Monitoring System
VPA	Virtual Population Analysis
VTR	Vessel Trip Report
WNA	Western North Atlantic



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## **4.0 INTRODUCTION AND BACKGROUND OF SPECIFICATION PROCESS**

### **4.1 Purpose and Need of the Action**

The purpose of this action is to analyze bluefish management measures for fishing year 2010 and to establish that the proposed measures will ensure that the annual fishing mortality target specified in the bluefish Fishery Management Plan (FMP) will not be exceeded. The 2010 management measures include total allowable landings (TAL), a commercial quota and annual recreational harvest limit, as well as a recreational possession limit. The Council met jointly with the Atlantic Coast Marine Fisheries Commission's Bluefish Board and recommended the proposed measures at their August 2009 meeting.

The need for this action is to set the annual fishing control measures to maintain commercial and recreational fisheries while adequately minimizing the risk of overfishing the bluefish stock. Without these control measures, unregulated fishing for bluefish may increase to the point that could ultimately lead to an overfished stock.

The bluefish fisheries in U.S. waters of the western Atlantic Ocean are managed under the Bluefish FMP that was prepared cooperatively by the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission). The plan was approved by the National Marine Fisheries Service (NMFS) in March 1990 and adopted by the Commission in October 1989. The FMP was amended in 1999 to bring it into compliance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) of 1976 as amended by the Sustainable Fisheries Act (SFA) and the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA). The SFA requires that the management measures proposed in a FMP be consistent with ten national standards for fishery conservation and management. Under ACFCMA, if a state does not implement management measures required by an FMP or amendment, the Federal government may impose a moratorium on the landing of the species covered by the FMP in that state.

Comprehensive measures enacted by Amendment 1 to the Bluefish FMP (MAFMC 1999; the final rule became effective in August 2000; 50 CFR Part 902) were designed to rebuild the bluefish stock. Amendment 1 regulations require that a commercial quota and recreational harvest limit be based on projected stock size estimates as derived from the latest stock assessment information. Estimates of stock size coupled with the target fishing mortality rate allow for a calculation of total allowable catch (TAC). This is reduced by recent discards levels to calculate total allowable landings (TAL). Based on the historic proportion of commercial and recreational landings for the period 1981 to 1989, 17 percent of the TAL is allocated to the commercial fishery. Amendment 1 stipulates that if 17 percent of the TAL is less than 10.500 M lb, then the commercial quota can be increased up to 10.500 M lb if the recreational fishery is projected to land less than 83 percent of the TAL for the upcoming year and provided that the combination of the projected recreational landings and the commercial

quota does not exceed the TAL. The recreational harvest limit would then be adjusted downward so that the TAL would be unchanged.

The Amendment also established a Monitoring Committee (MC) which meets annually to review the best available data and make recommendations regarding the TAL and other management measures in the plan. The MC's recommendations are intended to achieve the target fishing mortality rate established in the amendment to reduce overfishing. The MC bases its review and recommendations on best available data including, but not limited to, commercial and recreational catch/landing statistics, current estimates of fishing mortality, stock abundance, discards for the recreational fishery, and juvenile recruitment. This year, the MC's review was informed by the recommendations of the Council's SSC. The SSC met prior to the MC in accordance with the Magnuson-Stevens Reauthorization Act (MSRA) which places greater emphasis on the SSC's involvement in the management process.

Based on the recommendations of the SSC and the MC, the Council's Bluefish Committee makes a recommendation to the Council which in turn makes a recommendation to the Regional Administrator. The NMFS Regional Administrator reviews the recommendation and may revise it if necessary to achieve FMP objectives. In addition, because the FMP is a joint plan with the Commission, the Commission's Bluefish Board (Board) adopts complementary measures.

Framework Adjustment 1 to the Bluefish FMP, which was approved by NMFS on August 10, 2001 (66 FR 42156), established a procedure through which RSA amounts would be set annually as part of Council's quota-setting process. The research is to support the collection of new information that will benefit both the commercial and recreational fisheries for this species. The program encourages collaborative efforts among the public, research institutions, and the government subsidized by a percentage set-aside from the TAL of selected species, including bluefish, under management by the Council.

#### **4.2 Management Objectives of the FMP**

- 1) Increase understanding of the stock and of the fishery;
- 2) Provide the highest availability of bluefish to U.S. fishermen while maintaining, within limits, traditional uses of bluefish;
- 3) Provide for cooperation among the coastal states, the various regional marine fishery management councils, and Federal agencies involved along the coast to enhance the management of bluefish throughout its range;
- 4) Prevent recruitment overfishing; and
- 5) Reduce the waste in both the commercial and recreational fisheries.

To attain these management objectives, the FMP (as modified by Amendment 1) specifies the following measures that may be specified annually:

- Permit and reporting requirements for commercial fishermen, dealers, and party/charter boat operators.
- Commercial fish size limitations and minimum mesh requirements.
- Commercial quota with state allocations.
- *De minimus* specifications for the commercial quota.
- Recreational size, possession, and seasonal limits.
- A recreational harvest limit.

#### **4.3 Methods of Analysis**

The basic approach adopted in this analysis is an assessment of various management measures from the standpoint of determining the impacts upon the environment. This includes impacts with and without a deduction landings limits to accommodate the likely RSA allocation. The NMFS Quota Report as of the week ending November 11, 2009 indicated that bluefish commercial landings were well within the 2009 coast-wide quota for (56 percent of quota landed). It is anticipated that the commercial quota will not be exceeded in 2009, and therefore; discussion of the 2010 commercial quotas in this document does not include an adjustment for overages.

Box 4.3.1 describes the alternatives for bluefish including the Council-preferred alternative (specified at the August 2009 Council meeting), a status quo alternative, and any additional alternatives under consideration. These recommendations and their impacts relative to 2008 landings are shown in Box 4.3.2.

The MSA requires each Council establish an SSC to assist it by providing it with, among other things, ongoing scientific advice for fishery management decisions, including recommendations for acceptable biological catch (ABC), preventing overfishing, and maximum sustainable yield. The FMP established a Monitoring Committee which annually review the best available scientific information and provide recommendations regarding annual specifications for this species. The Monitoring Committee crafts recommendations and considers a broad range of relevant information which may include, but is not limited to, stock status updates from the most recent stock assessment; estimates of fishing mortality; recruitment, landings and catch information; and impacts of specific commercial and recreational fishery regulations (i.e., fish size, possession limits, and seasonal closures), including non-compliance rates for those regulations.

Each Council must then develop annual catch limits (ACLs) that do not exceed the fishing level recommendations of its SSC or its peer review process. Based on SSC and Monitoring Committee's recommendations, the Council makes a recommendation to the NMFS Northeast Regional Administrator. The Regional Administrator reviews the recommendation forwarded through this specifications document and may revise it if necessary to achieve FMP objectives and statutory requirements. Because the FMP is cooperatively managed with the Commission, the Commission's Bluefish Board (Board) typically adopts complementary measures. The Council met jointly with the Board in August 2009 and recommended complementary management measures for the three species for 2010.

This specifications document serves a dual purpose, as it is a vehicle to convey the Council recommendations to the Regional Administrator. It also serves as a decision document for the Regional Administrator, who reviews the analysis of impacts of the various management alternatives presented here and determines which alternative achieves the FMP objectives as well as the objectives and statutory requirements under MSA and other applicable law.

This environmental assessment (EA) examines the impacts of each proposed action on the affected environment. The aspects of the affected environment that are likely to be directly or indirectly affected by the actions proposed in this document are described as *valued ecosystem components* (VECs; Beanlands and Duinker 1984). These VECs comprise the affected environment and are specifically defined as the managed resources (bluefish) and any non-target species; habitat, including essential fish habitat (EFH) for the managed resource and non-target species; endangered and protected resources; and any human communities (social and economic aspects of the environment). The impacts of the alternatives are evaluated with respect to these VECs.

To conduct a concise analysis of each of the quota alternatives, an RSA amount is deducted from the TAL for each alternative. Framework 1 to the FMP established a procedure through which research set-aside amounts up to 3 percent are set annually as part of the Council's quota-setting process, to support collaborative research projects among the public, research institutions, and NMFS. The actual RSA for fishing year 2010 will depend on the specific amounts requested by the approved research projects, but can not exceed 3 percent of the TAL. Therefore, the maximum 3 percent RSA was analyzed for each alternative and reduced impacts would be anticipated with RSA amounts less than the maximum allowable 3 percent. While the Council-adjusted TALs given in this document deduct RSA, they were not adjusted for 2009 partial-year overages. NMFS will adjust quotas based on updated information on overages (and final approved RSA projects) as part of the final rule that implements the 2010 specifications late in 2009 when the data are more complete.

It is also important to stress that projected recreational landings from 2010 were used to compare the Council-adjusted recreational harvest limit for 2010 to projected landings for that year and potential quota transfers from the recreational fishery to the commercial fishery. Generally, an algorithm is used to estimate recreational harvest for an upcoming year based on

an assumption of constant [proportional] landings by wave in the fishery. Under this assumption, the recreational bluefish landings from the complete waves in a given year ( $L_t$ ) were divided by the proportion of total recreational landings comprised by those previous  $n$  years ( $P_{t-n}$ ). The ratio ( $L_t/P_{t-n}$ ) was used to project total recreational landings for the current year, and these landings, it was assumed, would be continued into the subsequent fishing year. The data presented to the Monitoring Committee and Council for discussion had landings data available for waves 1 and 2 of 2009. Landings for waves 1 and 2 comprised an average 3.4 percent of the total recreational landings since 2000. Therefore, it is suggested that this type of projection be postponed until more complete data are available. In the mean time, it is suggested that the recreational landings for 2008 be applied to 2010 for calculation of the recreational harvest limit as a placeholder until a projection can be made. Recreational landings in 2008 (18.900 M lb) are not are not radically different from average recreational landings for the past five years (section 6.1 of the EA). Note: It is possible that future update of recreational landings projections done by the NMFS (when more data is available, e.g., following wave 5 of the MRFSS data) could result in transfers different from those presented in this specifications package.

All management alternatives under consideration for bluefish were analyzed for 2010 only. A full description of each of these alternatives, including a discussion of a No Action Alternative, is given in section 5.0 of the EA.

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<b>Box 4.3.1. Comparison of the alternatives under consideration in this specification package. All units are in pounds.</b>						
<b>Alternative</b>	<b>2010 Initial TAL</b>	<b>2010 Initial Commercial Quota</b>	<b>2010 Initial Recreational Harvest Limit</b>	<b>2010 Research Set-Aside<sup>a</sup></b>	<b>2010 Council-Adjusted Commercial Quota<sup>b</sup></b>	<b>2010 Council-Adjusted Recreational Harvest Limit</b>
<b>Alternative 1 (Preferred Alternative)</b>						
2 <sup>nd</sup> Least Restrictive Comm. Quota	29,263,814	4,974,848	24,288,966	877,914	10,051,140	18,334,760
<b>Alternative 2 (Presumes rebuilt stock)</b>						
Least Restrictive Comm. Quota	33,562,784	5,705,673	27,857,111	1,006,884	10,185,000	22,370,900
<b>Alternative 3 (Status Quo/No Action)</b>						
Status Quo TAL - Most Restrictive Comm. Quota	29,356,411	4,990,590	24,365,821	880,692	9,533,732	18,941,986

<sup>a</sup>Note that this RSA amount represents 3 percent of the TAL associated with the respective alternative; therefore, the conditionally-approved project amounts may be less than or equal to this value.

<sup>b</sup>Note that the Council-adjusted quotas are provisional and may be modified in the NMFS final rule to account for 2009 overages and/or transfers when 2009 data are more complete.

<b>Box 4.3.2. Commercial quotas under each alternative compared to actual 2008 landings.</b>		
	<b>Council-Adjusted 2010 Commercial Quota (lb)</b>	<b>Percent Change compared to 2008 landings (5.977 M lb)</b>
<b>Alternative 1 (Preferred Alternative)</b>		
2 <sup>nd</sup> Least Restrictive Comm. Quota	10,051,140	+68
<b>Alternative 2</b>		
Least Restrictive Comm. Quota	10,185,000	+70
<b>Alternative 3 (Status Quo/No Action)</b>		
Status Quo TAL - Most Restrictive Comm. Quota	9,533,732	+60

## 5.0 MANAGEMENT ALTERNATIVES

According to the FMP, the bluefish TAL is initially split with 17 percent going to the commercial quota and 83 percent available for recreational harvest. If recreational landings in the upcoming year are expected to be less than 83 percent of the TAL, then a "transfer" of quota can be made to increase the commercial allocation. Additionally, according to the FMP, up to 3 percent of the TAL can be allocated as RSA. If a project is approved that requests a bluefish RSA, the approved amount is deducted proportionally from the commercial quota and recreational harvest limit. Nevertheless, the RSA alternatives presented in this document are independent actions and not alternatives to the management actions considered in Alternatives 1 through 3.

The rebuilding plan established through Amendment 1 to the Bluefish FMP stipulates that until the stock has rebuilt, the target fishing mortality rate ( $F_{\text{target}}$ ) in a given year shall either be a value specified in the plan or the status quo fishing mortality rate, whichever is less. The most recent stock assessment update (June 2009) resulted in an estimate of bluefish biomass for 2008 that is above  $B_{\text{MSY}}$  ( $B_{\text{MSY}} = 147,051$  mt;  $B_{2008} = 167,727$  mt).

After reviewing the assessment results, the Council's SSC noted that there is sufficient uncertainty in some of the assessment model data inputs. More specifically, the SSC noted that most of the uncertainty relates to the data used to establish the ALK, a central source of information for developing the CAA matrix that the ASAP model attempt to replicate; the SSC also noted that fishery independent data and seine surveys do not sample this pelagic species effectively, so survey indices do not track stock abundance well. Given this scientific uncertainty, the SSC and monitoring committee recommended setting allowable catch (TAC) for 2010 at a level consistent with the rebuilding fishing mortality rate ( $F = 0.15$ ) rather than increasing  $F$  target to the level specified in the FMP for a recovered stock ( $90\%F_{\text{MSY}}$ ;  $F = 0.17$ ). The Council responded in kind and recommended management measures consistent with the more risk-averse target  $F$  (0.15).

The various management alternatives considered by the Council are characterized below. Under all of the alternatives, a status quo recreational bag limit of 15 fish would remain in place for 2010.

### 5.1 Alternative 1 (Preferred Alternative)

Alternative 1 specifies a TAC of 34.376 M lb which is projected to achieve the rebuilding target  $F$  (0.15) in 2010 – the Council's preferred strategy. Subtracting average discards for 2006-2008 (5.112 M lb) from the TAC generates a TAL of 29.264 M lb. Under this scenario, a transfer of quota to the commercial fishery would be allowable since the projected recreational landings (18.900 M lb) are less than 83 percent of the TAL (projected rec. landings are 65 percent of the TAL; section 5.0 of the EA). The TAL under this alternative would result in an initial commercial quota of 4.975 M lb and recreational harvest limit of 24.289 M lb. The

Council recommended a transfer of 5.387 M lb; this would result in an adjusted commercial quota of 10.362 M lb and an RHL of 18.902 M lb.

The Council approved an RSA for bluefish of up to 3 percent of the TAL. Adjusting these values (post transfer commercial quota and recreational harvest limit) for RSA (0.878 M lb) would result in a Council-adjusted commercial quota of 10.051 M lb and an RHL of 18.335 M lb. This alternative would allow for the second greatest amount of bluefish commercial quota among all the evaluated alternatives.

The overall TAL under this alternative is near identical to the TAL under Alternatives 3 (status quo) and would likely achieve the target  $F$  in 2010. The difference between this preferred alternative and Alternatives 3 relates to the manner in which the overall TAL is allocated to the commercial and recreational components of the bluefish fishery.

## **5.2 Alternative 2 – (Non-Preferred Alternative; Presumes Bluefish Stock Is Rebuilt)**

Alternative 2 would allow for the bluefish stock to be fished at 90% of  $F_{MSY}$  ( $F = 0.17$ ) as opposed to  $F_{rebuild}$  (0.15) during the rebuilding phase. A target  $F$  of 0.17 for 2010 corresponds to a TAC of 38.675 M lb. Subtracting average discards for 2006-2008 (5.112 M lb) from the TAC generates a TAL of 33.563. The TAL under this alternative would result in an initial commercial quota of 5.706 M lb and an RHL of 27.857 M lb. Under this scenario, a transfer of quota to the commercial fishery would be allowable since the projected recreational landings (18.900 M lb) are less than 83 percent of the TAL (projected rec. landings are 56 percent of the TAL). Accordingly, a transfer of 4.794 M lb would result in a commercial quota of 10.500 M lb and an RHL of 23.063 M lb. This transfer is equal to the maximum transfer allowed (section 4.1 of the EA). Adjusting these values (post transfer commercial quota and recreational harvest limit) for RSA (1.007 M lb) would result in a Council-adjusted commercial quota of 10.185 M lb and an RHL of 22.371 M lb. This alternative would allow for the greatest amount of bluefish commercial quota among all the evaluated alternatives.

## **5.3 Alternative 3 - (Non-Preferred Alternative; Status Quo/No Action)**

Alternative 3 (No Action) is considered to be synonymous with "status quo" management measures for 2010 since the alternative interpretation (failure to specify management measures) would be in gross violation of the MSFCMA. Therefore, Alternative 3 would maintain the 2009 TAL (29.356 M lb). This would result in an initial commercial quota of 4.991 M lb and recreational harvest limit of 24.366 M lb. Assuming a transfer from the recreational fishery to the commercial fishery similar to the transfer that occurred in 2009 (4.838 M lb) would result in an adjusted commercial quota of 9.829 M lb and an RHL of 19.528 M lb. Adjusting these values (post transfer commercial quota and recreational harvest limit) for RSA (0.881 M lb) would result in a Council-adjusted commercial quota of 9.534 M lb and an RHL of 18.942 M lb. This alternative would result in the lowest possible landings in 2010 for the commercial sector (i.e., most restrictive alternative to commercial sector).

It is important to mention that while this is the status quo alternative, the final adjusted commercial quota and recreational harvest limit presented above are slightly different from the final commercial quota and recreational harvest limit implemented in 2009 (quota = 9.696 M lb; RHL = 19.528 M lb) mainly due to differences between the RSA amounts used to adjust the TALs between those two time periods.

#### **5.4 Research Set-Aside Alternatives**

Framework Adjustment 1 to the Bluefish FMP established a program in which research projects can be funded through the sale of fish that has been set-aside from the total annual quota. Through the Mid-Atlantic RSA Program, the Council encourages collaborative efforts among the public, research institutions, and government agencies in broadening the scientific base upon which management decisions are made. Reserving a small portion of the annual harvest as RSA quota to subsidize the research costs of vessel operations and scientific expertise is considered an important investment in the future of the nation's fisheries.

In addition, the Mid-Atlantic RSA Program assures that research endeavors selected and funded under this program will receive the peer-review and analysis necessary to be utilized in improving the management of public fisheries resources. The annual RSA amount may vary between 0 and 3 percent of each species' quota. For those species that have both a commercial quota and an RHL, the set-aside calculation shall be made from the combined TAL.

##### **5.4.1 Alternative 4.1 - No Research Set-Aside (No Action)**

Under this alternative, no RSA will be implemented for bluefish in 2010. Thus, the quotas and RHL would not be adjusted downward for the RSAs.

##### **5.4.2 Alternative 4.2 - Specify a Research Set-Aside for 2010 (Preferred/Status Quo Alternative)**

The Council has recommended that 3-percent of the 2010 bluefish quota, which is 879,000 lb (399 mt), be set-aside to fund projects selected under the 2010 Mid-Atlantic RSA Program. The project selection and award process for the 2010 Mid-Atlantic RSA Program has not concluded and therefore, the bluefish research quota award is not known. NMFS will return any un-awarded set-aside amount to the commercial fishery either through the 2010 bluefish specification rulemaking process or through the publication of a separate notice in the *Federal Register* notifying the public of a quota adjustment.

Vessels harvesting bluefish RSA quota in support of approved research projects would be issued exempted fishing permits (EFP) authorizing them to fish during Federal bluefish quota closures. MSA requires that interested parties are provided an opportunity to comment on all proposed EFPs. This exemption is necessary to allow project investigators to recover research expenses as well as adequately compensate fishing industry participants harvesting research

quota. Vessels harvesting research quota would operate within all other regulations that govern the commercial fishery, unless otherwise exempted through a separate EFP. Because quota closures may or may not occur during a given fishing year, exemption from these closures will have no additional environmental effects beyond those identified under alternative 5.4.1.

## **6.0 DESCRIPTION OF AFFECTED ENVIRONMENT**

The Valued Ecosystem Components (VECs) affected by the alternatives include the biological components of the environment including the managed resource (bluefish) and other non-target species. The other VECs described below are habitat including EFH, endangered and protected resources, and human communities/socio-economic environment, all of which are described below.

### **6.1 Description of the Managed Resource**

#### **6.1.1 Landings**

The commercial and recreational fisheries for bluefish are fully described in section 2.3 of Amendment 1 to the Bluefish FMP (MAFMC 1999). Among these two fishery sectors, the recreational fishery has consistently been the larger. For the 1981 through 2008 period, recreational landings have ranged from 86 percent of total landings in 1986 to 53 percent in 1999. On average for the 2004 through 2008 period, recreational landings represented 72 percent of the total landings for this species (Table 1). The absolute magnitude of landings has varied much more in the recreational fishery than in the commercial fishery. In 1981, estimated recreational landings were 95.288 M lb. A protracted decline reduced recreational harvest to less than one tenth that amount (8.253 M lb) by 1999 although no recreational harvest limits were in place during that period. Over the same time period, commercial landings decreased as well, but only by a factor of two (16.454 M lb in 1981; 7.309 M lb in 1999). In recent years (1999-2008), recreational landings have increased; while commercial landings have remained more or less stable (Table 1).

#### **6.1.2 Status of the Stock**

The most recent stock assessment for bluefish was conducted in June 2005 and was peer-reviewed by the 41<sup>st</sup> SARC (NEFSC 2005). An "age-structured assessment program" (ASAP model) was used to estimate bluefish fishing mortality and biomass as well as update the biological reference points. According to the assessment, bluefish were not overfished ( $B_{2004} = 104,136$  mt which is greater than the minimum biomass threshold or  $\frac{1}{2} B_{MSY} = 73,526$  mt) and overfishing was not occurring ( $F_{2004} = 0.15$  which is less than the maximum fishing mortality threshold or  $F_{MSY} = 0.19$ ).

The most recent stock assessment update (June 2009) resulted in an estimate of bluefish biomass for 2008 that is above  $B_{MSY}$  ( $B_{MSY} = 147,051$  mt;  $B_{2008} = 163,727$  mt). Biomass has

been above the target since 2007 and the bluefish stock is formally considered to be rebuilt. The assessment update also concluded that the Atlantic stock of bluefish is not experiencing overfishing; i.e., the most recent  $F$  ( $F_{2008} = 0.12$ ) is less than the maximum  $F$  overfishing threshold specified by SARC-41 ( $F_{MSY} = 0.19$ ). However, as described above, the Council informed by its SSC and Monitoring Committee interpreted the assessment update with caution. More specifically, the SSC noted that there are various sources of scientific uncertainty associated with the updated stock assessment. For example, the SSC noted that most of the uncertainty relates to the data used to establish the ALK, a central source of information for developing the CAA matrix that the ASAP model attempt to replicate; the SSC also noted that fishery independent data and seine surveys do not sample this pelagic species effectively, so survey indices do not track stock abundance well.

### **6.1.3 Stock Characteristics and Ecological Relationships**

A full description of stock characteristics and ecological relationships of bluefish are found in section 2.1.3 of Amendment 1. Additional information can be found in the 41<sup>st</sup> Stock Assessment Workshop (NEFSC 2005) document. The following excerpt is taken from the 41<sup>st</sup> SAW Summary Report, which is available via the internet at <http://www.nefsc.noaa.gov/nefsc/publications/crd/crd0514/>

“New biological reference points were developed for comparison to current stock status. The preferred ASAP model output estimated  $F_{MSY}=0.19$ . The model also estimated  $F_{MAX} = 0.28$ ,  $F_{0.1} = 0.18$  and  $F_{30\%}$  as 0.28”

“ $F_{MULT}$  is the estimate of full  $F$ . The 2004  $F_{MULT}$  value equals 0.149. The trend in  $F$  has steadily declined since 1991 when  $F$  reached 0.41. The time series of  $F$  from the VPA shows less variability since 1990, bounded between 0.1 and 0.23. If the average VPA  $F$  for ages 1-4 is compared to ASAP average  $F$  for the same ages, the resulting  $F$  trends between the two models are very similar.”

“January 1st population sizes show a general increase in overall abundance since 1997. Abundance estimates peaked in 1982 at 176 million fish, declined to 57 million in the mid-1990s, and has since increased to 92 million fish. Biomass estimates peaked in 1982 at 229,000 mt then declined to 65,000 mt by 1997 before increasing to the 2004 level of 104,000 mt. The magnitude of population estimates are similar to those produced in the VPA.”

### **6.2 Habitat (Including Essential Fish Habitat)**

According to 50 CFR 600.815(a)(2)(i)(A), an initial inventory of available environmental and fisheries data sources relevant to the managed species should be used in describing and identifying EFH. This inventory on the physical and biological characteristics of the environment in the mid-Atlantic subregion is found in sections 2.2 and 2.2.1 of Amendment 1.

An additional inventory of the physical and biological characteristics of specific habitats found within the jurisdiction of the Northeast Region can be found in Stevenson *et al.* (2004).

Bluefish spawning occurs in offshore areas principally from April to May in southern waters and June through August in the mid-Atlantic Bight. Eggs are pelagic and highly buoyant with hatching and early larval development occurring in oceanic waters. Larvae are strongly associated with the surface and have been sampled during every season of the year in offshore waters from Cape Cod, Massachusetts to Palm Beach, Florida. Young-of-year bluefish move inshore with estuaries serving as the chief habitat during the juvenile life stage. In general, adult bluefish travel northward in spring and summer, and southward in fall and winter. Tagging studies indicate that the southerly migration route may be closer to shore than the northerly migration in spring and both migration periods are characterized by some offshore-inshore movement. Estuarine and near shore waters are important habitat for juvenile and adult bluefish from Florida to Maine.

Specific habitats that are designated as bluefish EFH are detailed in section 6.2.2 of this EA. Bluefish are a predominantly pelagic species (Fahay 1998). Life history data show that there are only loose associations of bluefish with any particular substrate or submerged aquatic vegetation (SAV; Fahay 1998). Juveniles are the only life stage which spatially and temporally co-occur on a regular basis with SAV. Bluefish juveniles and adults commonly occur in estuarine areas during the period of the year when eelgrass is present and prey on species which are associated with SAV. Some degree of linkage with SAV is likely, but given the extent to which the life cycle of bluefish occurs offshore outside the range of SAV, it is probably less than for other species (Laney 1997).

### **6.2.1 Other Species Potentially Impacted by the Action**

Any species that could potentially be impacted by these actions is considered part of the affected environment. Species that could be potentially impacted by the action include prey species (section 2.2.6 of Amendment 1), species with overlapping EFH (section 6.2.2 of this EA), bycatch species of this fishery (section 3.1.3.9 of Amendment 1), and protected species (section 5.1.3.1 of Amendment 1 and section 6.3 of this EA). Additionally, general faunal assemblages specific to North and Mid-Atlantic habitat types are identified in Stevenson *et al.* (2004).

The term "bycatch" means fish that are harvested in a fishery, but that are not sold or kept for personal use. Bycatch includes the discard of whole fish at sea or elsewhere, including economic discards and regulatory discards, and fishing mortality due to an encounter with fishing gear that does not result in capture of fish (i.e., unobserved fishing mortality). Bycatch does not include any fish that legally are retained in a fishery and kept for personal, tribal, or cultural use, or that enter commerce through sale, barter, or trade. Bycatch does not include fish released alive under a recreational catch-and-release fishery management program. A catch-and-release fishery management program is one in which the retention of a particular

species is prohibited. In such a program, those fish released alive would not be considered bycatch.

Bluefish is primarily a recreational fishery caught by hook and line. The commercial fishery for bluefish is primarily prosecuted with gillnets, otter trawls, and handlines. This fishery often harvests mixed species, including bonito, Atlantic croaker, weakfish, spiny dogfish, and other species. Given the mixed species nature of the bluefish fishery, incidental catch of other species does occur. The bluefish fisheries are managed principally through the specification of annual commercial quotas and recreational harvest levels.

### **6.2.2 Bluefish EFH**

Bluefish EFH was defined in Amendment 1 to the bluefish FMP. The definitions for each life stage are repeated below:

Eggs: 1) North of Cape Hatteras, pelagic waters found over the Continental Shelf (from the coast out to the limits of the EEZ) at mid-shelf depths, from Montauk Point, NY south to Cape Hatteras in the highest 90 percent of the area where bluefish eggs were collected in the MARMAP surveys; and 2) South of Cape Hatteras, 100 percent of the pelagic waters over the Continental Shelf (from the coast out to the eastern wall of the Gulf Stream) through Key West, Florida at mid-shelf depths. Bluefish eggs are generally not collected in estuarine waters and thus there is no EFH designation inshore. Generally, bluefish eggs are collected between April through August in temperatures greater than 64 °F (18 °C) and normal shelf salinities (>31 ppt).

Larvae: 1) North of Cape Hatteras, pelagic waters found over the Continental Shelf (from the coast out to the limits of the EEZ) most commonly above 49 ft (15 m), from Montauk Point, New York south to Cape Hatteras, in the highest 90 percent of the area where bluefish larvae were collected during the MARMAP surveys; 2) South of Cape Hatteras, 100 percent of the pelagic waters greater than 15 meters over the Continental Shelf (from the coast out to the eastern wall of the Gulf Stream) through Key West, Florida; and 3) the "slope sea" and Gulf Stream between latitudes 29° 00 N and 40° 00 N. Bluefish larvae are not generally collected inshore so there is not EFH designation inshore for larvae. Generally, bluefish larvae are collected April through September in temperatures greater than 64 °F (18 °C) in normal shelf salinities (>30 ppt).

Juveniles: 1) North of Cape Hatteras, pelagic waters found over the Continental Shelf (from the coast out to the limits of the EEZ) from Nantucket Island, Massachusetts south to Cape Hatteras, in the highest 90 percent of the area where juvenile bluefish are collected in the NEFSC trawl survey; 2) South of Cape Hatteras, 100 percent of the pelagic waters over the Continental Shelf (from the coast out to the eastern wall of the Gulf Stream) through Key West, Florida; 3) the "slope sea" and Gulf Stream between latitudes 29° 00 N and 40° 00 N; and 4) all major estuaries between Penobscot Bay, Maine and St. Johns River, Florida. Generally juvenile bluefish occur in North Atlantic estuaries from June through October, Mid-



Atlantic estuaries from May through October, and South Atlantic estuaries March through December, within the "mixing" and "seawater" zones (Nelson *et al.* 1991, Jury *et al.* 1994, Stone *et al.* 1994). Distribution of juveniles by temperature, salinity, and depth over the continental shelf is undescribed (Fahay 1998).

Adults: 1) North of Cape Hatteras, over the Continental Shelf (from the coast out to the limits of the EEZ), from Cape Cod Bay, Massachusetts south to Cape Hatteras, in the highest 90 percent of the area where adult bluefish were collected in the NEFSC trawl survey; 2) South of Cape Hatteras, 100 percent of the pelagic waters over the Continental Shelf (from the coast out to the eastern wall of the Gulf Stream) through Key West, Florida; and 3) all major estuaries between Penobscot Bay, Maine and St. Johns River, Florida. Adult bluefish are found in North Atlantic estuaries from June through October, Mid-Atlantic estuaries from April through October, and in South Atlantic estuaries from May through January in the "mixing" and "seawater" zones (Nelson *et al.* 1991, Jury *et al.* 1994, Stone *et al.* 1994). Bluefish adults are highly migratory and distribution varies seasonally and according to the size of the individuals comprising the schools. Bluefish generally found in normal shelf salinities (> 25 ppt).

### **6.2.3 EFH for Species Overlapping With This FMP**

All of the areas listed in section 6.2.2 above overlap to some degree with EFH for other MAFMC managed species including surfclams and ocean quahogs, squid, mackerel, butterfish, and dogfish, as well as the New England Fishery Management Council (NEFMC) species of groundfish within the Northeast Multispecies FMP (Atlantic cod, haddock, ocean pout, American plaice, pollock, redfish, white hake, windowpane flounder, winter flounder, witch flounder, yellowtail flounder, and Atlantic halibut), monkfish, seven species of skates, and Atlantic sea scallops. Numerous species within the NMFS Highly Migratory Species Division and the South Atlantic Fishery Management Council (SAFMC) have EFH identified in areas also identified as EFH for bluefish.

#### 6.2.4 Baseline Impact of the Bluefish Fishery on EFH

According to 50 CFR Section 600 (a)(2)(i):

“Each FMP must contain an evaluation of the potential adverse effects of fishing on EFH designated under the FMP, including effects of each fishing activity regulated under the FMP or other FMPs. This evaluation should consider the effects of each fishing activity on each type of habitat found within each FMP. FMPs must describe each fishing activity, review and discuss all available relevant information (such as information regarding the intensity, extent, and frequency of any adverse effect on EFH; the type of habitat within EFH that may be affected adversely; and the habitat functions that may be disturbed), and provide conclusions regarding whether and how each fishing activity adversely affects EFH.”

The baseline fishing effects analysis is provided in the Mid-Atlantic Council's specification of management measures for the 2004 fishing year (MAFMC 2003). This analysis considered 1995-2001 as the baseline time period. Baseline conditions (i.e., the distribution and intensity of bottom otter trawling in the commercial bluefish fishery) have not changed significantly since 2001. As indicated in Table 1, commercial landings since 2001 have actually declined as recreational landings have increased. The 2004 evaluation of the habitat impacts of bottom otter trawls, gillnets, and handlines used in the commercial bluefish fishery indicated that the baseline impact of the fishery was minimal and temporary in nature. Therefore, it was concluded that adverse effects of the bluefish fishery on EFH did not need to be minimized. Since commercial landings of bluefish have declined since 2001, the adverse impacts of the bluefish fishery have continued to be minimal during the time period 2002-2008. Potential impacts of the proposed 2010 commercial quota are evaluated in section 7.1 of this EA.

#### 6.3 Endangered and Other Protected Species

There are numerous species which inhabit the environment within the management unit of the Bluefish FMP that are afforded protection under the Endangered Species Act of 1973 (ESA; i.e., for those designated as threatened or endangered) and/or the Marine Mammal Protection Act of 1972 (MMPA) and are under NMFS' jurisdiction. Fourteen are classified as endangered or threatened under the ESA, while the remainder is protected by provisions of the MMPA. The Council has determined that the following list of species protected either by the ESA or the MMPA may be found in the environment utilized by bluefish:

##### Cetaceans

###### Species

North Atlantic right whale (*Eubalaena glacialis*)  
Humpback whale (*Megaptera novaeangliae*)  
Fin whale (*Balaenoptera physalus*)  
Blue whale (*Balaenoptera musculus*)

###### Status

Endangered  
Endangered  
Endangered  
Endangered

Sei whale ( <i>Balaenoptera borealis</i> )	Endangered
Sperm whale ( <i>Physeter macrocephalus</i> )	Endangered
Minke whale ( <i>Balaenoptera acutorostrata</i> )	Protected
Beaked whale ( <i>Ziphius and Mesoplodon spp.</i> )	Protected
Risso's dolphin ( <i>Grampus griseus</i> )	Protected
Pilot whale ( <i>Globicephala spp.</i> )	Protected
White-sided dolphin ( <i>Lagenorhynchus acutus</i> )	Protected
Common dolphin ( <i>Delphinus delphis</i> )	Protected
Spotted and striped dolphins ( <i>Stenella spp.</i> )	Protected
Bottlenose dolphin ( <i>Tursiops truncatus</i> )	Protected
Harbor porpoise ( <i>Phocoena phocoena</i> )	Protected

## Seals

<u>Species</u>	<u>Status</u>
Harbor seal ( <i>Phoca vitulina</i> )	Protected
Gray seal ( <i>Halichoerus grypus</i> )	Protected
Harp seal ( <i>Phoca groenlandica</i> )	Protected
Hooded seal ( <i>Cystophora cristata</i> )	Protected

## Sea Turtles

<u>Species</u>	<u>Status</u>
Leatherback sea turtle ( <i>Dermochelys coriacea</i> )	Endangered
Kemp's ridley sea turtle ( <i>Lepidochelys kempii</i> )	Endangered
Green sea turtle ( <i>Chelonia mydas</i> )	Endangered*
Hawksbill sea turtle ( <i>Eretmochelys imbricata</i> )	Endangered
Loggerhead sea turtle ( <i>Caretta caretta</i> )	Threatened

\*Green turtles in U.S. waters are listed as threatened except for the Florida breeding population which is listed as endangered.

## Fish

<u>Species</u>	<u>Status</u>
Shortnose sturgeon ( <i>Acipenser brevirostrum</i> )	Endangered
Atlantic salmon ( <i>Salmo salar</i> )	Endangered
Smalltooth sawfish ( <i>Pristis pectinata</i> )	Endangered

The status of these and other marine mammal populations inhabiting the Northwest Atlantic has been discussed in detail in the U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments. Initial assessments were presented in Blaylock *et al.* (1995) and are updated in

Waring *et al.* (2007). The most recent information on the stock assessment of various marine mammals through 2009 can be found at: <http://www.nmfs.noaa.gov/pr/sars/>.

Three other useful websites on marine mammals are:

<http://www.nmfs.noaa.gov/pr/recovery>,

<http://spo.nwr.noaa.gov/mfr611/mfr611.htm>, and

<http://www.nmfs.noaa.gov/pr/species/mammals>.

### **Protected Species Interactions with the Bluefish Fishery – Includes Fishery Classification under Section 118 of Marine Mammal Protection Act**

Under Section 118 of the MMPA, NMFS must publish and annually update the List of Fisheries (LOF), which places all US commercial fisheries in one of three categories based on the level of incidental serious injury and mortality of marine mammals in each fishery (arranging them according to a two-tiered classification system). The categorization of a fishery in the LOF determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements. The classification criteria consist of a two-tiered, stock-specific approach that first addresses the total impact of all fisheries on each marine mammal stock (Tier 1) and then addresses the impact of the individual fisheries on each stock (Tier 2). If the total annual mortality and serious injury of all fisheries that interact with a stock is less than 10 percent of the Potential Biological Removal (PBR) for the stock then the stock is designated as Tier 1 and all fisheries interacting with this stock would be placed in Category III. Otherwise, these fisheries are subject to categorization under Tier 2. PBR is the product of minimum population size, one-half the maximum productivity rate, and a “recovery” factor (MMPA Sec. 3. 16 U.S.C. 1362; Wade and Angliss 1997).

Under Tier 2, individual fisheries are subject to the following categorization:

Category I. Annual mortality and serious injury of a stock in a given fishery is greater than or equal to 50 percent of the PBR level;

Category II. Annual mortality and serious injury of a stock in a given fishery is greater than one percent and less than 50 percent of the PBR level; or

Category III. Annual mortality and serious injury of a stock in a given fishery is less than one percent of the PBR level.

In Category I, there is documented information indicating a "frequent" incidental mortality and injury of marine mammals in the fishery. In Category II, there is documented information indicating an "occasional" incidental mortality and injury of marine mammals in the fishery. In Category III, there is information indicating no more than a "remote likelihood" of an incidental taking of a marine mammal in the fishery or, in the absence of information

indicating the frequency of incidental taking of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area suggest there is no more than a remote likelihood of an incidental take in the fishery. "Remote likelihood" means that it is highly unlikely that any marine mammal will be incidentally taken by a randomly selected vessel in the fishery during a 20-day period.

According to the 2010 LOF bluefish are a component of the Mid-Atlantic coastal gillnet fishery which is listed as a Category I fishery. NMFS notes that this fishery is classified as Category I because of serious injuries and mortalities for three protected resource stocks. These include the Western North Atlantic (WNA) coastal bottlenose dolphin, Gulf of Maine/Bay of Fundy harbor porpoise, and Gulf of Maine humpback whale populations. Similarly, NMFS has listed, as Category II, the North Carolina inshore gillnet, Southeast Atlantic gillnet (by analogy), Mid-Atlantic bottom trawl, Mid-Atlantic flynet (by analogy), Mid-Atlantic haul/beach seine and North Carolina long haul seine due to impacts on WNA coast bottlenose dolphin, WNA common dolphin, WNA long-finned pilot whale and WNA short-finned pilot whale. The complete list of Category I and II fisheries that target bluefish and their respective impacts are given in Box 6.3.1 below. All listed fishing gears are required to meet gear restrictions under the Atlantic Large Whale Take Reduction Plan, Harbor Porpoise Take Reduction Plan, Bottlenose Dolphin Take Reduction Plan, MMPA, and the ESA.

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**Box 6.3.1. Fishery gear types used for bluefish harvest that may also impact marine mammals according to the 2010 List of Fisheries. Importantly, the bluefish fishery is not identified as contributing to incidental takes in the "fishery interactions" sections of the stock assessment reports for any of these species.**

**CATEGORY I fisheries associated with bluefish harvest**

<b>Fishery</b>	<b>Species affected</b>
Mid-Atlantic gillnet	Bottlenose dolphin, WNA coastal <sup>1</sup> Bottlenose dolphin, WNA offshore Common dolphin, WNA Gray seal, WNA Harbor porpoise, GME/BF <sup>1</sup> Harbor seal, WNA Harp seal, WNA Humpback whale, Gulf of Maine <sup>1</sup> Long-finned pilot whale, WNA Minke whale, Canadian east coast Short-finned pilot whale, WNA White-sided dolphin, WNA

**CATEGORY II fisheries associated with bluefish harvest**

<b>Fishery</b>	<b>Species affected</b>
NC inshore gillnet	Bottlenose dolphin, WNA coastal <sup>1</sup>
Southeast Atlantic gillnet <sup>2</sup>	Bottlenose dolphin, WNA coastal <sup>1</sup>
Mid-Atlantic bottom trawl	Common dolphin, WNA <sup>1</sup> White-sided dolphin, WNA <sup>1</sup> Long-finned pilot whale, WNA <sup>1</sup> Short-finned pilot whale, WNA <sup>1</sup>
Mid-Atlantic flynet <sup>2</sup>	None documented
Mid-Atlantic haul/beach seine	Bottlenose dolphin, WNA coastal <sup>1</sup>
NC long haul seine	Bottlenose dolphin, WNA coastal <sup>1</sup>

List of Abbreviations and Symbols Used in Box 6.3.1: GME/BF - Gulf of Maine/Bay of Fundy; NC - North Carolina; WNA - Western North Atlantic

<sup>1</sup> - Fishery classified based on serious injuries and mortalities of this stock, which are greater than 1 percent of the stock's PBR

<sup>2</sup> - Fishery classified by analogy.

## **Description of species of concern that are protected under MMPA**

Although multiple cetacean and pinniped species are listed in Box 6.3.1, due to their inclusion in the 2010 LOF as having encounters with the associated gear types in that table, only Atlantic bottlenose dolphin and leatherback sea turtles have known encounters with the bluefish fishery. As such, information on those species only is provided below. Anyone interested in obtaining information on the other species listed above is encouraged to make use of the most recent species' stock assessment reports available online at: <http://www.nmfs.noaa.gov/pr/sars/> for marine mammals and [http://www.nero.noaa.gov/prot\\_res/seaturtles/](http://www.nero.noaa.gov/prot_res/seaturtles/) for sea turtles.

### **Atlantic Bottlenose Dolphin (*Tursiops truncatus*)**

The text, tables and figures below are taken directly from the most recent stock assessment report on Atlantic bottlenose dolphin (Waring *et al.*, 2007; available at: <http://www.nefsc.noaa.gov/nefsc/publications/tm/tm205/>). There are two morphologically and genetically distinct bottlenose dolphin morphotypes described as the coastal and offshore forms. Both inhabit waters in the western North Atlantic Ocean along the U.S. Atlantic coast which overlap the temporal and spatial distribution of the bluefish fishery. The two morphotypes are genetically distinct based upon both mitochondrial and nuclear markers.

#### *Offshore morphotype*

The offshore form is distributed primarily along the outer continental shelf and continental slope in the Northwest Atlantic Ocean; however the offshore morphotype has been documented to occur relatively close to shore over the continental shelf south of Cape Hatteras, NC. Seasonally, bottlenose dolphins occur over the outer continental shelf and inner slope as far north as Georges Bank. Sightings have occurred along the continental shelf break from Georges Bank to Cape Hatteras during spring and summer. The range of the offshore bottlenose dolphin may include waters beyond the continental slope, and offshore bottlenose dolphins may move between the Gulf of Mexico and the Atlantic. Dolphins with characteristics of the offshore type have stranded as far south as the Florida Keys (Waring *et al.* 2007).

The best available abundance estimate for offshore morphotype bottlenose dolphins is the sum of the estimates from the summer 2002 aerial survey covering the continental shelf, the summer 2004 vessel survey south of Maryland, and the summer 2004 vessel and aircraft surveys north of Maryland (Waring *et al.* 2007). This joint estimate provides complete coverage of the offshore morphotype habitat from central Florida to Canada during summer months. The combined abundance estimate from these surveys is 81,588 (CV = 0.17). The minimum population estimate is the lower limit of the two-tailed 60 percent confidence interval of the lognormally distributed best abundance estimate. This is equivalent to the 20th percentile of the log-normal distribution as specified by Wade and Angliss (1997). The minimum population estimate for western North Atlantic offshore bottlenose dolphin is 70,775. Available data are insufficient to determine population trends (Waring *et al.* 2007).

PBR is the product of minimum population size, one-half the maximum productivity rate, and a “recovery” factor (MMPA Sec. 3. 16 U.S.C. 1362; Wade and Angliss 1997). The minimum population size for offshore bottlenose dolphins is 70,775. The maximum productivity rate is 0.04, the default value for cetaceans. The “recovery” factor, which accounts for endangered, depleted, threatened stocks, or stocks of unknown status relative to optimum sustainable population (OSP) is assumed to be 0.4 because this stock is of unknown status and due to the uncertainty in bycatch estimates. PBR for the western North Atlantic offshore bottlenose dolphin is therefore 566 (Waring *et al.* 2007).

The status of this stock relative to OSP in the U.S. Atlantic EEZ is unknown. The western North Atlantic offshore bottlenose dolphin is not listed as threatened or endangered under the Endangered Species Act. There are insufficient data to determine the population trends for this species. Average 2001-2005 annual U.S. fishery-related mortality and serious injury has not been estimated, and it is therefore unknown whether or not total mortality and serious injury can be considered insignificant (Waring *et al.* 2007).

### *Coastal morphotype*

The coastal morphotype of bottlenose dolphin is continuously distributed along the Atlantic coast south of Long Island, around the Florida peninsula and along the Gulf of Mexico coast (Figure 1). Based on differences in mitochondrial DNA haplotype frequencies, nearshore animals in the northern Gulf of Mexico and the western North Atlantic represent separate stocks. Genetic analyses of samples from northern Florida, Georgia, central South Carolina (primarily the estuaries around Charleston), southern North Carolina, and coastal Virginia, using both mitochondrial DNA and nuclear microsatellite markers indicate that a significant amount of the overall genetic variation can be explained by differences between these areas. Based upon available data and analysis, seven management units within the range of the coastal morphotype of western North Atlantic bottlenose dolphin have been defined. The true population structure is likely more complex than the seven units identified and research efforts continue to identify that structure (Waring *et al.* 2007).

Abundance estimates for bottlenose dolphins in each management unit were calculated using line transect methods and distance analysis (Waring *et al.* 2007). The independent and joint estimates from the two survey teams were used to quantify the probability that animals available to the survey on the track line were missed by the observer teams, or perception bias, using the direct duplicate estimator. These estimates were further partitioned between the coastal and offshore morphotypes based upon the results of the logistic regression models and spatial analyses described above. A parametric bootstrap approach was used to incorporate the uncertainty in the logistic regression models into the overall uncertainty in the abundance estimates for each management unit. The aerial surveys included only animals in coastal waters, and the resulting abundance estimates therefore do not include animals inside estuaries that are currently included in the defined management units. An abundance estimate was generated for bottlenose dolphins in estuaries from the North Carolina-South Carolina border



to northern Pamlico Sound using mark-recapture methodology, and these estimates were post-stratified to be consistent with management unit definitions (Box 6.3.2). Since abundance estimates do not exist for all estuarine waters, the population estimates and PBRs for these management units are negatively biased. There are insufficient data to determine the population trend for these stocks (Waring *et al.* 2007).

**Box 6.3.2 (Table 1 from Waring *et al.* 2007)**

Table 1. Estimates of abundance and the associated CV, $n_{min}$ , and PBR for each stock of WNA coastal bottlenose dolphins (Garrison <i>et al.</i> 2003). The PBR for the Northern Migratory, Northern NC, and Southern NC management units are applied semi-annually. South of NC, the PBR is applied annually. Except where noted, abundance estimates and PBR values do not include estuarine animals. The recovery factor (Fr) used to calculate PBR for each stock is based upon the CV of the mortality estimate based on the guidelines in Wade and Angliss (1997).							
Unit		Best Abundance		$N_{min}$	Recovery Factor (Fr)	PBR	
		Estimate	CV			Annual	½ Yr
SUMMER (May - October)							
Northern migratory		17,466	0.19	14,621	0.50	(146.2)	73.1
Northern NC							
	oceanic	6,160	0.52	3,255	0.48	(31.2)	15.6
	estuary <sup>a</sup>	919	0.13	828	0.50	(8.2)	4.2
	BOTH	7,079	0.45	4,083	0.48	(39.2)	19.6
Southern NC							
	oceanic	3,645	1.11	1,863	0.40	(14.9)	7.5
	estuary <sup>a</sup>	141	0.15	124	0.50	(1.2)	0.6
	BOTH	3,786	1.07	1,987	0.40	(15.9)	7.9
WINTER (November – April)							
NC mixed <sup>b</sup>		16,913	0.23	13,558	0.50	(135.6)	67.8
ALL YEAR							
South Carolina		2,325	0.20	1,963	0.50	19.6	na
Georgia		2,195	0.30	1,716	0.50	17.2	na
Northern Florida <sup>c,d</sup>		448	0.38	unk	unk	unk	unk
Central Florida <sup>d</sup>		10,652	0.46	unk	unk	unk	unk
a. Read <i>et al.</i> 2003							
b. NC mixed = northern migratory, Northern NC, and Southern NC							
c. Northern Florida estimates are a weighted mean of abundance estimates from the winter 1995 survey and the summer 2002 survey. Due to the age of the winter abundance estimate, PBR cannot be calculated for this stock.							
d. Northern and Central Florida estimates include data from the winter 1995 survey and cannot be used to determine PBR due to their age.							

The coastal migratory stock was designated as depleted under the MMPA. From 1995 to 2001, NMFS recognized only a single migratory stock of coastal bottlenose dolphins in the WNA, and the entire stock was listed as depleted. The management units described in Waring *et al.* 2007 replaced the single coastal migratory stock. It should be noted that dolphins residing in a number of bays, sounds, and estuaries in the mid-Atlantic region adjacent to the named stocks are included in these stocks, but for the most part they have not been assessed and are not included in the reported abundance, mortality, and PBR estimates. Since one or more of the management units may be depleted, all management units retain the depleted designation. Mortality exceeded PBR in the North Carolina winter mixed stocks during the period from 1996 to 2000. However, due to recent declines in fishery effort and apparent declines in bycatch rates, estimated fishery mortality does not exceed PBR for any of the stocks (Box 6.3.1). It should be noted that the gillnet fishery effecting the summer southern North Carolina management unit has not been observed in recent years, and the impact of entanglements with crab pots in Georgia and South Carolina is unknown. The total U.S. fishery-related mortality and serious injury for most stocks is not less than 10 percent of the calculated PBR, and thus cannot be considered to be insignificant and approaching zero mortality and serious injury rate. The species is not listed as threatened or endangered under the Endangered Species Act, but the management units are strategic stocks due to the depleted listing under the MMPA (Waring *et al.* 2007).

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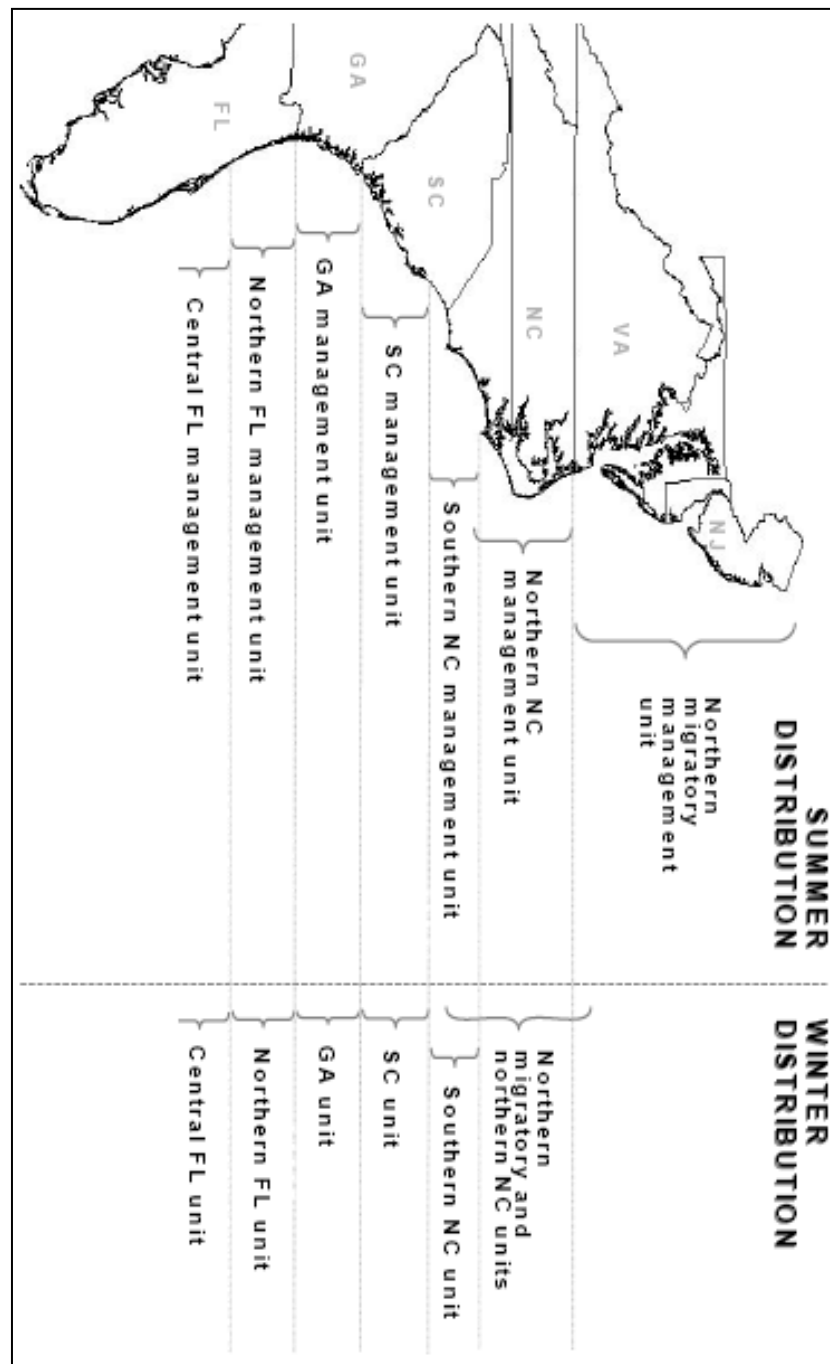


Figure 1. Management units of the coastal morphotype of bottlenose dolphin along the Atlantic coast of the US as defined from genetic, stable isotope ratio, photo-identification, and telemetry studies (taken from NMFS 2005).

### *Fishery interactions*

This fishery has the highest documented level of mortality of WNA coastal morphotype bottlenose dolphins, and the North Carolina sink gillnet fishery is its largest component in terms of fishing effort and observed takes. Of 12 observed mortalities between 1995 and 2000, 5 occurred in sets targeting spiny or smooth dogfish and another in a set targeting “shark” species, 2 occurred in striped bass sets, 2 occurred in Spanish mackerel sets, and the remainder were in sets targeting kingfish, weakfish, or finfish generically (Palka and Rossman 2001). Only two bottlenose dolphin mortalities were observed in 2001-2002, both occurring in the winter mixed North Carolina unit. Two additional mortalities were observed in the northern North Carolina management unit in 2003 and 2004. The overall estimated level of mortality has declined during the past five years associated with reductions in fishery effort and reduced observed bycatch (Rossman in review). Due to these significant changes in the behavior of the fishery, bycatch estimates for these fisheries are separated into two periods: 1996 to 2000 and 2001 to 2005. Bycatch rate estimates for the 2001-2005 period are based solely on observed takes during 2001 and 2002. Estimates of total mortality for 2003-2005 are based upon fishery effort reported during those years. (Box 6.3.3 from Waring *et al.* 2007).

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**Box 6.3.3. (Taken from Waring *et al.* 2007). Summary of the 1996-2002 incidental mortality of bottlenose dolphins (*Tursiops truncatus*) by management unit in the commercial Mid-Atlantic coastal gillnet fisheries. Data include the years sampled (Years), the number of vessels active within the fishery (Vessels), type of data used (Data Type), observer coverage (Observer Coverage), mortalities recorded by on-board observers (Observed Mortality), estimated annual mortality (Estimated Mortality), estimated CV of the annual mortality (Estimated CVs), and mean annual mortality (CV in parentheses).**

Seasonal Management Unit	Years	Vessels	Data Type <sup>a</sup>	Observer Coverage <sup>b</sup>	Observed Serious Injury	Observed Mortality	Estimated Mortality <sup>c</sup>	Estimated CVs <sup>d</sup>	Mean Annual Mortality
Summer Northern Migratory	1996-2000	NA	Obs. Data, NER Dealer Data	.05, .03, .02, .03, .03,	0, 0, 0, 0, 0	0, 0, 1, 1, 1,	33, 30, 37, 19, 30,	0.48, 0.48, 0.48, 0.48, 0.48	30 (0.22)
	2001-2002			.02, .01	0, 0	0, 0	11, 11	0.35, 0.35	11 (0.25)
Summer Northern NC	1996-2000	NA	Obs. Data, NCDMF Dealer Data	.01, .00, <.01, .01, .03,	0, 0, 0, 0, 0	1, 0, 0,0, 0,	27, 33, 17, 13, 26,	0.61, 0.61, 0.61, 0.61, 0.61	23 (0.29)
	2001-2002			.01, <.01	0, 0	0, 0	8, 8	1.06, 1.06	8 (0.75)
Summer Southern NC	1996-2000	NA	Obs. Data,NCDMF Dealer Data	.00, .00, .01, .03, .03,	0, 0, 0, 0, 0	0, 0, 0, 0, 0	0, 0, 0, 0, 0	NA	0 (NA)
	2001-2002			.02, <.01	0, 0	0, 0	0, 0	NA	0 (NA)
Winter NC mixed	1996-2000	NA	Obs. Data, NCDMF Dealer Data	.01, .01, .02, .02, .02,	0, 0, 0, 0, 0	1, 0, 1, 2, 2,	173, 211, 175, 196, 146,	0.46, 0.46, 0.46, 0.46, 0.46	180 (0.21)
	2001-2002			.01, .01	0, 0	0, 2	67, 50	0.45, 0.45	58 (0.32 )
Total	2001-2002 Only								77 (0.26)
NA	Not Available								
a	Observer data (Obs. data) are used to measure bycatch rates; the data are collected within the Northeast Fisheries Observer Program. The NEFSC collects weighout landings data that are used as a measure of total effort for the sink gillnet fisheries.								
b	The observer coverage for the Mid-Atlantic coastal sink gillnet fishery is measured as a proportion of the tons of fish landed.								
c	The annual estimates of mortality from 2001-2002 were generated by applying the same method used in Palka and Rossman (2001). A new factor variable was added to the model to separate the time series of historical data (1996-2000) from data collected during the recent time period (2001-2002) (Rossman and Palka, unpublished manuscript).								
d	The annual estimates of mortality from 1998-2000 were generated by applying one bycatch rate per management unit as estimated by a generalized linear model (Palka and Rossman 2001). The CV does not account for variability that may exist in the unit of total landings (mt) from each year that are used to expand the bycatch rate. Therefore, the CV is the same for all five annual estimates.								

NMFS has developed a take reduction plan to reduce injuries and deaths to Atlantic bottlenose dolphins caused by fishing gear in Federal waters of the Mid- and South Atlantic. A team was convened in November of 2001 under authority of the MMPA in order to formulate a Bottlenose Dolphin Take Reduction Plan (BDTRP). Category II fisheries under the MMPA received a high priority with respect to observer coverage and consideration for measures under the Bottlenose Dolphin Take Reduction Plan. The resulting BDTRP implemented April 26, 2006 (71 CFR 24776), includes the regulatory management measures summarized in Box 6.3.3 for small, medium, and large mesh gillnets, which are organized by bottlenose dolphin Management Unit (MU), specific location, as well as non-regulatory conservation measures (Waring *et al.* 2007).

Box 6.3.4 Summary of BDTRP Regulations.

Fishing Area	Management Unit	Gillnet Mesh Size Requirements (Stretched Mesh)		
		Small (<5 inch)	Medium (>5 in to <27 in)	Large (>27 inch)
NI-VA	Summer Northern Migratory	None	June 1–October 31: Anchored gillnets – fishermen must remain within 0.5 nm (0.93 km) of the closest portion of each gear fished at night in State waters, and any gear fished at night must be removed from the water and stowed on board the vessel before the vessel returns to port. None	June 1–October 31: Anchored gillnets – fishermen must remain within 0.5 nm (0.93 km) of the closest portion of each gear fished at night in State waters, and any gear fished at night must be removed from the water and stowed on board the vessel before the vessel returns to port.
Cape Charles Light, VA to VAWNC border	Winter Mixed - Virginia	None	None	November 1–December 31: No fishing at night in State waters, and, at night, gear must be removed from the water and stowed on board the vessel.
VAWC border to Cape Lookout, NC	Summer Northern North Carolina AND Winter Mixed Northern North Carolina	May 1–October 31: In State waters, net length must be less than or equal to 1,000 feet (304.8 m). None	November 1–April 30: No fishing at night in State waters; sunset clause of 3 years for this restriction.	April 15–December 15: No fishing in State waters <sup>1</sup> ; December 15–April 14: No fishing at night in State waters without tie-downs.
Cape Lookout, NC to the North Carolina/South Carolina Border <sup>2</sup>	Summer Southern North Carolina AND Winter Mixed - Southern North Carolina	None	November 1–April 30: No fishing at night in State waters; sunset clause of 3 years for this restriction.	April 15–December 15: No fishing in State waters <sup>1</sup> ; December 15–April 14: No fishing at night in State waters and, at night, gear must be removed from the water and stowed on board the vessel.
SC, GA, and FL	South Carolina, Georgia, Northern Florida, and Central Florida	Year-round for all gillnet gear: Fishermen must remain within 0.25 nautical mile (0.48 km) of the closest portion of their gear at all times in State and Federal waters within 14.6 nautical miles (27 km) from shore. Gear must be removed from the water and stowed on board the vessel before the vessel returns to port.		

<sup>1</sup> The dates for the large mesh prohibition codify current North Carolina state regulations, and therefore, slightly deviate from the BDTRP summer and winter dates in which other regulatory measures are applied.

<sup>2</sup> These prohibitions stop at the North Carolina/South Carolina border rather than extending to Minnie Water, South Carolina as defined by the Southern North Carolina MU because gillnet fishing activity is limited in South Carolina.

## Description of Sea Turtle Species with Documented Interactions with the Bluefish Fishery

### Leatherback sea turtle

The information on leather back sea turtles provided below was taken directly from the Biological Opinion on Atlantic Sea Scallops (available at: <http://www.nero.noaa.gov/nero/hotnews/seaturtles/index.html>). Section 7 consultation on the continued operation of the bluefish fishery was reinitiated on December 18, 2007, given information on the taking of leatherback sea turtles in the fishery. That consultation is on-going, but is anticipated to be completed by spring 2010. \*

Leatherback sea turtles are widely distributed throughout the oceans of the world, and are found in waters of the Atlantic and Pacific Oceans, the Caribbean Sea, and the Gulf of Mexico (Ernst and Barbour 1972). Leatherback sea turtles are the largest living turtles and range farther than any other sea turtles species; their large size and tolerance of relatively low temperatures allows them to occur in northern waters such as off Labrador and in the Barents Sea (NMFS and USFWS 1995). In 1980, the leatherback population was estimated at approximately 115,000 adult females globally (Pritchard 1982). By 1995, this global population of adult females was estimated to have declined to 34,500 (Spotila *et al.* 1996). However, the most recent population size estimate for the North Atlantic alone is a range of 34,000-94,000 adult leatherbacks (Leatherback TEWG 2007). Thus, there is uncertainty with respect to global population estimates of leatherback sea turtles.

Evidence from tag returns and strandings in the western Atlantic suggests that adult leatherback sea turtles engage in routine migrations between boreal, temperate and tropical waters (NMFS and USFWS 1992). Leatherbacks are frequently thought of as a pelagic species that feed on jellyfish (i.e., *Stomolophus*, *Chrysaora*, and *Aurelia* (Rebel 1974)), and tunicates (salps, pyrosomas) in oceanic habitat. However, leatherbacks are also known to use coastal waters of the U.S. continental shelf (James *et al.* 2005; Eckert *et al.* 2006; Murphy *et al.* 2006) as well as the European continental shelf on a seasonal basis (Witt *et al.* 2007).

A 1979 aerial survey of the outer Continental Shelf from Cape Hatteras, North Carolina to Cape Sable, Nova Scotia showed leatherbacks to be present throughout the area with the most numerous sightings made from the Gulf of Maine south to Long Island. Leatherbacks were sighted in water depths ranging from 1-4151 m but 84.4 percent of sightings were in waters less than 180 m (Shoop and Kenney 1992). Leatherbacks were sighted in waters within a sea surface temperature range similar to that observed for loggerheads; from 7-27.2°C (Shoop and Kenney 1992). This aerial survey estimated the leatherback population for the northeastern U.S. at approximately 300-600 animals (from near Nova Scotia, Canada to Cape Hatteras, North Carolina). However, the estimate was based on turtles visible at the surface and does not include those that were below the surface out of view. Therefore, it likely underestimates the leatherback population for the northeastern U.S. Estimates of leatherback abundance of 1,052 turtles (CV= 0.38) and 1,174 turtles (CV= 0.52) were obtained from surveys conducted from

Virginia to the Gulf of St. Lawrence in 1995 and 1998, respectively (Palka 2000). However, since these estimates were also based on sightings of leatherbacks at the surface, the author considered the estimates to be negatively biased and the true abundance of leatherbacks may be 4.27 times the estimates (Palka 2000).

Of the Atlantic turtle species, leatherbacks seem to be the most vulnerable to entanglement in fishing gear. This susceptibility may be the result of their body type (large size, long pectoral flippers, and lack of a hard shell), and their attraction to gelatinous organisms and algae that collect on buoys and buoy lines at or near the surface, and perhaps to the lightsticks used to attract target species in longline fisheries. They are also susceptible to entanglement in gillnets (used in various fisheries) and capture in trawl gear (e.g., shrimp trawls, bottom otter trawls). Sea turtles entangled in fishing gear generally have a reduced ability to feed, dive, and surface to breathe or perform any other behavior essential to survival (Balazs 1985). In addition to drowning from forced submergence, they may be more susceptible to boat strikes if forced to remain at the surface, and entangling lines can constrict blood flow resulting in tissue necrosis.

Gillnet fisheries operating in the nearshore waters of the Mid-Atlantic states are also known to capture, injure and/or kill leatherbacks when these fisheries and leatherbacks co-occur. Data collected by the NEFSC Fisheries Observer Program from 1994 through 1998 (excluding 1997) indicate that a total of 37 leatherbacks were incidentally captured (16 lethally) in drift gillnets set in offshore waters from Maine to Florida during this period. Observer coverage for this period ranged from 54 percent to 92 percent. In North Carolina, a leatherback was reported captured in a gillnet set in Pamlico Sound in the spring of 1990 (D. Fletcher, pers.comm. to Sheryan Epperly, NMFS/SEFSC, 2001). Five other leatherbacks were released alive from nets set in North Carolina during the spring months: one was from a net (unknown gear) set in the nearshore waters near the North Carolina/Virginia border (1985); two others had been caught in gillnets set off of Beaufort Inlet (1990); a fourth was caught in a gillnet set off of Hatteras Island (1993), and a fifth was caught in a sink net set in New River Inlet (1993). In addition to these, in September 1995, two dead leatherbacks were removed from a 12-inch (28.2 cm) monofilament shark gillnet set in the nearshore waters off of Cape Hatteras, North Carolina (STSSN unpublished data reported in NMFS SEFSC 2001).

Other trawl fisheries are also known to interact with leatherback sea turtles although on a much smaller scale. In October 2001, for example, a fisheries observer documented the take of a leatherback in a bottom otter trawl fishing for *Loligo* squid off of Delaware. TEDs are not required in this fishery. In November 2007, fisheries observers reported the capture of a leatherback sea turtle in bottom otter trawl gear fishing for summer flounder.

Nest counts in many areas of the Atlantic show increasing trends, including for beaches in Suriname and French Guiana which support the majority of leatherback nesting (NMFS and USFWS 2007). The species as a whole continues to face numerous threats at nesting and marine habitats. The long term recovery potential of this species may be further threatened by



observed low genetic diversity, even in the largest nesting groups like French Guiana and Suriname (NMFS and USFWS 2007).

Based on its 5-year status review of the species, NMFS and the USFWS (2007) determined that endangered leatherback sea turtles should not be delisted or reclassified as threatened. However, it was also determined that an analysis and review of the species should be conducted in the future to determine whether DPS's should be identified for the leatherback, and what the status of any DPSs should be (NMFS and USFWS 2007).

### *Fishery Interactions*

Two leatherback sea turtle captures have been documented on observed bluefish fishing trips according to the NMFS Observer Database. Both animals were caught in drift gill nets. One was captured in July 2004. The condition of the animal when captured was recorded as "unknown". No information is available on the subsequent survival of the turtle. The other recorded incident was in August 2003. The turtle was alive and in good condition upon release. There are no mortality estimates for leatherback turtles that are attributed to the bluefish fishery.

### **Bluefish fishery interaction with an unidentified sea turtle**

The capture of an unidentified turtle species was recorded in June of 2004 in a bluefish drift net. The animal was captured alive and presumably released immediately. The capture condition was recorded as unknown.

### **Loggerhead Sea Turtle**

The loggerhead sea turtle occurs throughout the temperate and tropical regions of the Atlantic, Pacific and Indian Oceans (Dodd 1998). The loggerhead turtle was listed as "threatened" under the ESA on July 28, 1978, but is considered endangered by the World Conservation Union (IUCN) and under the Convention on International Trade in Endangered Species of Flora and Fauna (CITES). Loggerhead sea turtles are found in a wide range of habitats throughout the temperate and tropical regions of the Atlantic. These habitats include the open ocean, continental shelves, bays, lagoons, and estuaries (NMFS& FWS 2007b).

Since they are limited by water temperatures, sea turtles do not usually appear on the summer foraging grounds in the Gulf of Maine until June, but are found in Virginia as early as April. They remain in these areas until as late as November and December in some cases, but the large majority leaves the Gulf of Maine by mid-September. Loggerheads are primarily benthic feeders, opportunistically foraging on crustaceans and mollusks (NMFS & FWS 1995). Under certain conditions they also feed on finfish, particularly if they are easy to catch (e.g., caught in gillnets or inside pound nets where the fish are accessible to turtles).

The most recent 5-year ESA loggerhead sea turtle status review was completed in 2007 (NMFS & USFWS 2007b) which included a review of the most recent research results for loggerhead sea turtles. Genetic analyses conducted since the last five-year review indicate there are five demographically independent groups in the Western North Atlantic, corresponding to nesting beaches found in Florida and Mexico. The primary metric used to evaluate trends in global loggerhead populations are counts of beach nests, many of which occur in areas outside U.S. waters. Given that loggerhead nest counts have generally declined during the period 1989-2005, NMFS & USFWS (2007b) concluded that loggerhead turtles should not be delisted or reclassified and should remain designated as threatened under the ESA. However, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA is warranted for the species. Additionally, the Center for Biological Diversity and the Turtle Island Restoration Network has recently filed a petition to reclassify loggerhead turtles in the North Pacific Ocean as a distinct population segment (DPS) with endangered status and designate critical habitat under the ESA (72 Federal Register 64585; November 16, 2007). While this petition is geared toward the North Pacific, the possibility exists that it could affect status in other areas. NMFS has found that the petition presents substantial scientific information that the petition action may be warranted, and has published a notice and request for comments, available at: <http://www.nmfs.noaa.gov/pr/pdfs/fr/fr72-64585.pdf>.

### **Kemp's Ridley Sea Turtle**

Kemp's ridley turtles (*Lepidochelys kempii*) were listed as endangered under the ESA on December 2, 1970. The only major nesting site for ridleys is a single stretch of beach near Rancho Nuevo, Tamaulipas, Mexico (Carr 1963). Juvenile Kemp's ridleys inhabit northeastern US coastal waters where they forage and grow in shallow coastal areas during the summer months. Juvenile ridleys migrate southward with autumnal cooling and are found predominantly in shallow coastal embayments along the Gulf Coast during the late fall and winter months.

Ridleys found in mid-Atlantic waters are primarily post-pelagic juveniles averaging 40 cm in carapace length, and weighing less than 20 kg (44 lb). After loggerheads, they are the second most abundant sea turtle in Virginia and Maryland waters, arriving there during May and June and then emigrating to more southerly waters from September to November. In the Chesapeake Bay, ridleys frequently forage in shallow embayments, particularly in areas supporting submerged aquatic vegetation (Lutcavage and Musick 1985).

The model presented by Crouse *et al.* (1987) illustrates the importance of subadults to the stability of loggerhead populations and may have important implications for Kemp's ridleys. The vast majority of ridleys identified along the Atlantic Coast have been juveniles and subadults. Sources of mortality in this area include incidental takes in fishing gear, pollution and marine habitat degradation, and other man-induced and natural causes. Loss of individuals

in the Atlantic, therefore, may impede recovery of the Kemp's ridley sea turtle population. Sea sampling data from the northeast otter trawl fishery and southeast shrimp and summer flounder bottom trawl fisheries has recorded takes of Kemp's ridley turtles.

The Kemp's ridley population, as measured by number of nesting females, declined precipitously from the late 1940's through the mid-1980's. Due to intensive conservation actions, the Kemp's ridley began to slowly rebound during the 1990's and this increasing trend has continued to this day (NMFS & USFWS 2007d). Approximately 4,000 females are currently documented nesting annually, which is less than half of the downlisting criterion of 10,000 nests. As a result, the most recent five year review conducted by NMFS & USFWS 2007d concluded that the species should not be reclassified under the ESA and should remain listed as endangered. In addition, a full revision of the current Recovery Plan for the Kemp's Ridley Sea Turtle (which was signed in 1992) is currently under way by the services.

### **Green Sea Turtle**

Green sea turtles (*Chelonia mydas*) are more tropical in distribution than loggerheads, and are generally found in waters between the northern and southern 20°C isotherms. In the western Atlantic region, the summer developmental habitat encompasses estuarine and coastal waters as far north as Long Island Sound, Chesapeake Bay, and the North Carolina sounds, and south throughout the tropics (NMFS 1998). Most of the individuals reported in U.S. waters are immature (NMFS 1998). Green sea turtles found north of Florida during the summer must return to southern waters in autumn or risk the adverse effects of cold temperatures.

The breeding colony populations in Florida and the Pacific coast of Mexico were listed as endangered under the ESA on July 28, 1978, while all other populations, wherever found, were listed as threatened on the same date. Green turtles are threatened by incidental captures in fisheries, pollution and marine habitat degradation, destruction/disturbance of nesting beaches, and other sources of man-induced and natural mortality.

Juvenile green sea turtles occupy pelagic habitats after leaving the nesting beach. At approximately 20 to 25 cm carapace length, juveniles leave pelagic habitats, and enter benthic foraging areas, shifting to a chiefly herbivorous diet (NMFS 1998). Post-pelagic green turtles feed primarily on sea grasses and benthic algae, but also consume jellyfish, salps, and sponges. Known feeding habitats along U.S. coasts of the western Atlantic include shallow lagoons and embayments in Florida, and similar shallow inshore areas elsewhere (NMFS 1998).

Sea sampling data from the scallop dredge fishery and southeast shrimp and summer flounder bottom trawl fisheries have recorded incidental takes of green turtles.

The most recent 5-year ESA green sea turtle status review was completed in 2007 (NMFS & USFWS 2007a) which included an analysis of the most recent population and demographic data available for green sea turtles. Overall, of the 23 threatened population nesting sites for

which data are available, 10 nesting populations are increasing, 9 are stable, and 4 are decreasing (NMFS & USFWS 2007a). Long term continuous data sets (i.e., > 20 years) are available for nine sites, all of which are increasing. Despite the apparent global increase in numbers, NMFS & USFWS (2007a) noted that this positive overall trend should be viewed with caution because trend data are available for just over half of all sites examined. Within the Western Atlantic/Caribbean, there are five threatened breeding populations, all of which appear to be stable or increasing (NMFS & USFWS 2007a). The green turtle nesting population of Florida, which is listed as endangered, also appears to be increasing based on 18 years (1989-2006) of index nesting data collected throughout the state (NMFS & USFWS 2007a). While green turtle nest counts have generally increased, NMFS & USFWS (2007a) concluded that populations of both endangered and threatened green turtles should not be reclassified under the ESA. However, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA to both endangered and threatened green turtle populations is warranted.

## **6.4 Human Communities**

A detailed description of historical fisheries for bluefish is presented in section 2.3 of Amendment 1. The information presented in this section is intended to briefly characterize recent fisheries trends, both commercial and recreational. Landings trends are provided in section 6.1 above.

### **6.4.1 Commercial Fishery**

In 2008, commercial vessels landed about 6.0 M lb of bluefish valued at approximately \$2.7 million. Average coastwide ex-vessel price of bluefish was \$0.44/lb in 2008, a 22 percent increase from the previous year (2007 price = 0.36/lb). Bluefish comprised 0.19 percent and 0.43 percent of the total ex-vessel value and pounds, respectively of all finfish and shellfish species landed along the Atlantic coast of the U.S. in 2008. For states where bluefish were commercially landed, the contribution of bluefish to the total value of all finfish and shellfish varied by state in 2008 (Table 2). Bluefish ranged from less than 0.01 percent of total commercial value in Maine, South Carolina, and Georgia to 1.16 percent in New York. There were no bluefish landings in Pennsylvania in 2008. Relative to total landings value, bluefish were most important in New York and North Carolina, contributing the largest percentage of ex-vessel value of all commercial landings in those states. This contribution did not change considerably from the previous complete fishing year (i.e., 2007), and it is not expected to change considerably in 2009.

The economic impact of the commercial bluefish fishery relative to employment and wages is difficult to determine. According to NMFS data, commercial fishermen in the western Atlantic landed approximately 1.40 billion lb of fish and shellfish in 2008. Those landings have been valued at approximately \$1.42 billion. Total landed value ranged from approximately \$140

thousand in Pennsylvania to \$400 million in Massachusetts. However, it can be assumed that only a small amount of the region's fishing vessel employment, wages, and sales are dependent on bluefish since the relative contribution of bluefish to the total value and poundage of all finfish and shellfish is very small.

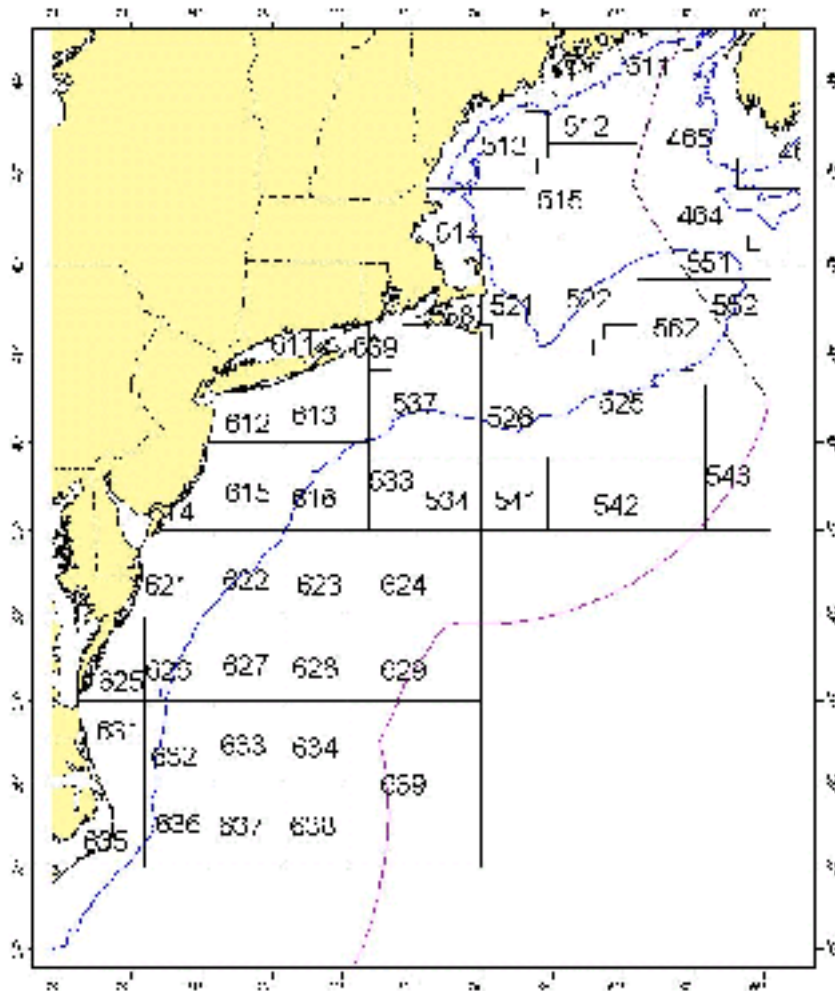
NMFS VTR data indicate that a total of 1,694 commercial trips targeting bluefish (bluefish  $\geq$  50 percent of total catch) resulted in landings of 2.017 M lb from Maine to North Carolina in 2008 (Table 3). Landings from directed trips are approximately 52 percent of total commercial landings for 2008 (i.e., 3.899 M lb) in the Northeast region. Gillnets accounted for 83.6 of the total commercial directed catch. Hook gear and trawl gear accounted for 3.6 percent, and 13.5 percent respectively. The remaining gear types comprised less than 1 percent of the VTR catch. Less than 1 percent of all otter trawl trips in 2008 were directed bluefish trips.

#### Description of the Areas Fished

The Northeast Region is divided into 46 statistical areas for Federal fisheries management (Figure 1). According to VTR data, seven of these areas comprised at least 5 percent of the total commercial bluefish catch in 2008, and collectively accounted for 52.9 percent of the commercial trips that caught bluefish and 76.4 percent of the bluefish catch. These seven areas include 636, 635, 614, 612, 615, 613, and 539; the percentages associated with each area are provided in Table 4. It may be noted that the vessel log database used to characterize the distribution of commercial harvest does not extend outside of the Northeast Region (i.e., to VA, SC, GA, FL).

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Figure 1. NMFS Northeast statistical areas.



#### 6.4.2 Recreational Fishery

During the 1980s, a significant portion of Mid-Atlantic recreational participants depended upon bluefish, particularly those fishing from party/charter vessels. For example, in 1985 party/charter boats in the Mid-Atlantic region landed a total of 22.2 M lb of fish, over half of which were bluefish (12.3 M lb). In 1990, a Council survey was conducted of party and charter boat owners between Maine and Virginia. The survey indicated that bluefish ranked first in the catch and was the second most desired species for party boat owners, while for

charter boats, bluefish ranked third in terms of desirability and second in terms of success rate. No survey exists for the more recent time-frame; however, from 2004 – 2008, the proportion of party and charter trips that targeted bluefish from Maine through Virginia has remained relatively constant.

MRFSS catch data by mode indicates that approximately 52 percent of bluefish were caught by private and rental boats between 1999 and 2008 (Table 5). In addition to private and rental boats, 41 percent of bluefish were caught from shore and 7 percent from party and charter boats for the same time period (Table 5).

Trends in directed fishing for bluefish from 1991 to 2008 are provided in Table 6. The lowest annual estimate of directed trips was 1.3 million in 1999; the highest annual estimate of directed trips was 5.8 million trips in 1991. In 2008, anglers targeted bluefish in 2.2 million trips.

Because of the importance of bluefish to recreational anglers, a change in expenditures by bluefish anglers would be expected to impact the sales, service, and manufacturing sectors for the overall recreational fishing industry. The total value recreational anglers place on the opportunity to fish can be divided into actual expenditures and a non-monetary benefit associated with satisfaction. In other words, anglers incur expenses to fish (purchases of gear, bait, boats, fuel, etc.), but do not pay for the fish they catch or retain nor for the enjoyment of many other attributes of the fishing experience (socializing with friends, being out on the water, etc.). Despite the obvious value of these fish and other attributes of the experience to anglers, no direct expenditures are made for them, hence the term "non-monetary" benefits. In order to determine the magnitude of non-monetary benefits, a demand curve for recreational fishing must be estimated. In the case of bluefish, as with many recreationally sought species, a demand curve is not available. Part of the problem in estimating a demand curve is due to the many and diverse attributes of a recreational fishing experience: socializing, weather, ease of access and site development, catch rates, congestion, travel expenditures, and costs of equipment and supplies, among others. A recreational angler's willingness-to-pay for bluefish must be separated from the willingness-to-pay for other attributes of the experience. Holding all other factors constant (expenditures, weather, etc.), a decrease in the catch (or retention rate) of bluefish could decrease demand and an increase in the catch (or retention rate) could increase demand. Each change will have an associated decrease/increase in expenditures and non-monetary benefits.

Recreational fishing contributes to the general well being of participants by affording them with opportunities for relaxation, experiencing nature, and socializing with friends. The potential to catch and ultimately consume fish is an integral part of the recreational experience, though studies have shown that non-catch related aspects of the experience are often as highly regarded by anglers as the number and size of fish caught. Since equipment purchase and travel-related expenditures by marine recreational anglers have a positive effect on local economies, the maintenance of healthy fish stocks is important to fishery managers.

#### 6.4.2.1 Economic impact of the recreational fishery

Anglers' expenditures generate and sustain employment and personal income in the production and marketing of fishing-related goods and services. In 2006, saltwater anglers from Maine through Virginia spent an estimated \$1.394 billion on trip-related goods and services (Gentner and Steinback 2008). Private/rental boat fishing comprised the majority of these expenditures (\$669.7 million; Table 7), followed by shore fishing (\$531.1 million) and party/charter fishing (\$193.0 million). Survey results indicate that the average trip expenditure in 2006 was \$40.34 for anglers fishing from a private/rental boat, \$45.32 for shore anglers, and \$149.14 for anglers that fished from a party/charter boat. Adjusted average expenditures in 2008 dollars are \$159.28 for party/charter boat trips, \$43.08 for private/rental boat trips, and \$48.40 for shore trips.<sup>1</sup> Trip-related goods and services included expenditures on private transportation, public transportation, food, lodging, boat fuel, private boat rental fees, party/charter fees, access/boat launching fees, equipment rental, bait, and ice. Unfortunately, estimates of trip expenditures specifically associated with bluefish were not provided in the study. However, if average trip expenditures are assumed to be constant across fishing modes, estimates of the expenditures associated with bluefish can be determined by multiplying the proportion of total trips that targeted bluefish by mode (expanded estimates; Table 8) by the total estimated trip expenditures from the Gentner and Steinback study. According to this procedure, anglers fishing for bluefish from Maine through Virginia spent an estimated \$100.31 million on trip-related goods and services in 2008. Approximately \$29.06 million was spent by anglers fishing aboard private/rental boats, \$58.20 million by those fishing from shore, and \$13.05 million by anglers fishing from party/charter boats. Apart from trip-related expenditures, anglers also purchase fishing equipment and other durable items that are used for many trips (i.e., rods, reels, clothing, boats, etc.). Although some of these items may be purchased with the intent of targeting/catching specific species, the fact that these items can be used for multiple trips creates difficulty when attempting to associate durable expenditures with particular species. Therefore, only trip-related expenditures were used in this assessment.

The bluefish expenditure estimates can be used to reveal how anglers' expenditures affect economic activity such as sales, income, and employment from Maine through Virginia. During the course of a fishing trip, anglers fishing for bluefish purchase a variety of goods and services, spending money on transportation, food, boat fuel, lodging, etc. The sales, employment, and income generated from these transactions are known as the direct effects of anglers' purchases. Indirect and induced effects also occur because businesses providing these goods and services also must purchase goods and services and hire employees, which in turn, generate more sales, income, and employment. These ripple effects (i.e., multiplier effects) continue until the amount remaining in a local economy is negligible. A variety of analytical approaches are available for determining these impacts, such as input-output modeling.

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<sup>1</sup>The 1998 estimate of expenditures by mode were adjusted to its 2008 equivalent by using the Bureau of Labor Statistics Consumer Price Index.



Unfortunately, a model of this kind was not available. Nonetheless, the total sales impacts can be approximated by assuming a multiplier of 1.5 to 2.0 for the Northeast Region (Scott Steinback, NMFS/NEFSC, pers. comm., 2009). Given the large geographical area of the Northeast Region, it is likely that the sales multiplier falls within those values. As such, the total estimated sales, income and employment generated from anglers that targeted bluefish in 2008 was likely to be between \$150.47 million (\$100.31 million \* 1.5) and \$200.62 million (\$100.31 million \* 2.0) from Maine through Virginia. A similar procedure could be used to calculate the total personal income, value-added, and employment generated from bluefish anglers' expenditures, but since these multiplier values have been quite variable in past studies, no estimates were provided here.

#### **6.4.2.2 Value of the fishery to anglers**

Behavioral models that examine travel expenditure, catch rates, accessibility of fishing sites, and a variety of other factors affecting angler enjoyment can be used to estimate the "non-monetary" benefits associated with recreational fishing trips. Unfortunately, a model of this kind does not exist specifically for bluefish. Data constraints often preclude researchers from designing species-specific behavioral models. However, a recent study by Hicks, *et. al.* (1999) estimated the value of access across states in the Northeast region (that is, what people are willing to pay for the opportunity to go marine recreational fishing in a particular state in the Northeast) and the marginal value of catching fish (that is, what people are willing to pay to catch an additional fish). Table 9 shows, on average, the amount anglers in the Northeast states (except for North Carolina which was not included in the study) are willing to pay for a one-day fishing trip. The magnitudes of the values in Table 9 reflect both the relative fishing quality of a state and the ability of anglers to choose substitute sites. The willingness to pay is generally larger for larger states, since anglers residing in those states may need to travel significant distances to visit alternative sites. Several factors need to be considered when examining the values in Table 9. First, note that Virginia has relatively high willingness to pay estimates given its relative size and fishing quality characteristics. In this study, Virginia defines the southern geographic boundary for a person's choice set, a definition that is arbitrary in nature. For example, an angler in southern Virginia is likely to have a choice set that contains sites in North Carolina. The regional focus of the study ignores these potential substitutes and therefore the valuation estimates may be biased upward (Hicks, *et. al.* 1999). Second, the values cannot be added across states since they are contingent upon all of the other states being available to the angler. If it were desirable to know the willingness to pay for a fishing trip within Maryland and Virginia, for example, the welfare measure would need to be recalculated while simultaneously closing the states of Maryland and Virginia.

Assuming the average willingness to pay values shown in Table 9 are representative of trips that targeted bluefish, these values can be multiplied by the number of trips that targeted bluefish by state to derive welfare values for bluefish. Table 10 shows the aggregate estimated willingness to pay by state for anglers that targeted bluefish in 2008 (i.e., the value of the opportunity to go recreational fishing for bluefish). New York, New Jersey, Massachusetts and

Maryland were the states with the highest estimated aggregate willingness to pay for bluefish day trips. Once again, note that the values cannot be added across states since values are calculated contingent upon all of the other states being available to the angler.

In the Hicks *et al.* (1999) study, the researchers also estimated welfare measures for a one fish change in catch rates for 4 different species groups by state. One of the species groups was "small game," of which bluefish is a component. Table 11 shows their estimate of the welfare change associated with a one fish increase in the catch rate of all small game by state. For example, in Massachusetts, it was estimated that all anglers would be willing to pay \$4.49 (the 1994 value adjusted to its 2008 equivalent) extra per trip for a one fish increase in the expected catch rate of all small game. The drawback to this type of aggregation scheme is that the estimates relate to the marginal value of the entire set of species within the small game category, rather than for a particular species within the grouping. As such, it is not possible to estimate the marginal willingness to pay for a one fish increase in the expected catch rate of bluefish from the information provided in Table 11.

However, it is possible to calculate the aggregate willingness to pay for a 1 fish increase in the catch rate of small game across all anglers. Assuming that anglers will not adjust their trip taking behavior when small game catch rates at all sites increase by one fish, the estimated total aggregate willingness to pay for a one fish increase in the catch rate of small game in 2008 was \$124.36 million (total trips (29.61 million) x average per trip value (\$4.20). This is an estimate of the total estimated welfare gain (or loss) to fishermen of a one fish change in the average per trip catch rate of all small game. Although it is unclear how much of this welfare measure would be attributable to bluefish, the results show that small game in general, in the Northeast, are an extremely valuable resource.

Although not addressed here, recreational fishing participants and non-participants may also hold additional intrinsic value out of a desire to be altruistic to friends and relatives who fish or to bequeath a fishery resource to future generations. A properly constructed valuation assessment would include both use and intrinsic values in the estimation of total net economic value. Currently, however, there have been no attempts to determine the altruistic value (i.e., non-use value) of bluefish in the Northeast.

#### **6.4.2.3 Marine recreational descriptive statistics**

In 1994, sport-fishing surveys were conducted by NMFS in the Northeast Region (Maine through Virginia) to obtain demographic and economic information on marine recreational fishing participants from Maine through Virginia. Data from the surveys were then used to access socioeconomic characteristics of these participants, as well as to identify their marine recreational fishing preferences and their perceptions of current and prospective fishery management regulations. The information that follows is excerpted and paraphrased from Steinback *et al.* (1999).

"Marine recreational fishing is one of the most popular outdoor recreational activities in America. In 1992, the lowest level of participation during the last ten years, approximately 2.57 million residents of coastal states in the Northeast Region participated in marine recreational fishing in their own state. Participation increased approximately 5 percent in 1993 (2.7 million) and increased another 14 percent in 1994 (3.1 million), exceeding the ten-year average of 2.9 million. Although the total number of finfish caught in the Northeast Region has declined over the past ten years effort (trips) has remained relatively stable. An estimated 22.4 million fishing trips were taken in 1994, up from 19.3 million in 1993."

The following discussion contains demographic and socioeconomic characteristics of anglers, as well as their preferences, attitudes, and opinions, toward recreational fishing activities and regulations. There was little or no difference in mean age across subregions. "The largest proportion of anglers in both sub-regions were 36-45 years old (NE=28 percent, MA=25 percent). However, New England anglers were younger than Mid-Atlantic anglers. Results show that participation in marine recreational fishing increased with age, peaked between ages of 36 to 45, and subsequently declined thereafter. The resultant age distribution is similar to the findings of other marine recreational studies. However, the distribution is not reflective of the general population in these subregions. Bureau of the Census estimates indicated population peaks between the ages of 25 to 34 in both subregions, declines until the age of 64 and then increases substantially." The complete distribution of recreational anglers by age for both subregions is as follows: less than 18, 25.2 percent in NE and 25.6 percent in MA; between the ages of 18-24, 9.8 percent in NE and 9.7 percent in MA; between 25-34, 16.4 percent in NE and 17.0 percent in MA; between 35-44, 16.3 percent in NE and 16.2 percent in MA; between 45-54, 11.5 percent in NE and 11.8 percent in MA; between 55-64, 8.2 percent in NE and 8.4 percent in MA; and 65 and over, 12.6 percent in NE and 11.3 percent in MA. In this survey, anglers under the age of 16 were not interviewed and are not included in the analysis.

In both subregions, at least 88 percent of the anglers (age 25 and over) had obtained at least a high school degree (NE=91 percent, MA=88 percent). "While the educational background is similar across subregions, a greater portion of the anglers in New England earned college or post graduate/professional degrees (NE=29 percent, MA=23 percent). The shape of the educational distribution essentially mirrored the general population in both subregions. However, the average number of anglers without a high school degree was considerably lower than Bureau of the Census estimates (age 25 and over) for the general population. On the other hand, it appears that anglers in New England and the Mid-Atlantic earned less post graduate/professional degrees than Bureau of Census estimates."

When anglers were asked to describe their racial or ethnic origin, almost all of the anglers interviewed in both subregions considered themselves to be white (NE=95 percent, MA=90 percent). "In the Mid-Atlantic, most of the remaining individuals were black (7 percent), leaving 3 percent to be of other ethnic origins. In New England, the remaining anglers were evenly distributed across other ethnic origins. The high occurrence of white fishermen is

representative of the general population of the coastal states in New England. Approximately 94 percent of the population in 1993 was estimated to be white. However, in the Mid-Atlantic, the percentage of white anglers was considerable higher than Bureau of Census populations estimates, and the percentage of black fishermen was 12 percent lower."

When anglers were asked to indicate from a range of categories what their total annual household income was, only minor differences between subregions were found. "The largest percentage of household incomes fell between \$30,001 and \$45,000 for both subregions (NE=27 percent, MA=26 percent). In comparison to the general population, anglers' annual household incomes are relatively higher in both subregions...Results are consistent with previous studies which showed that angler household incomes are generally higher than the population estimates."

If it is assumed that "years fished" is a proxy for "experience," the survey data shows that anglers in New England are relatively less experienced than anglers in the Mid-Atlantic. The distribution of recreational anglers years' of experience is as follows: 0-5 years of experience, 22 percent in NE and 16 percent in MA; 6-10 years of experience, 10 percent in NE and 10 percent in MA; 11-15 years of experience, 13 percent in NE and 14 percent in MA; 16-20 years of experience, 9 percent in NE and 9 percent in MA; 21-25 years of experience, 12 percent in NE and 12 percent in MA; 26-30 years of experience, 13 percent in NE and 12 percent in MA; and 30 or more years of experience, 21 percent NE and 26 percent in MA.

On average, it was found that New England anglers spent more on boat fees, lodging, and travel expenses than Mid-Atlantic anglers. "During the follow-up telephone portion of the survey, anglers that fished from a party/charter boat or a private/rental boat were asked how much they personally spent on boat fees for the trip in which they were interviewed. Boat fees averaged \$61.00 per trip in New England and \$51.00 in the Mid-Atlantic." Two categories of lodging expenses were obtained. "The first category (Lodging (>0)) is an estimate of the mean lodging expense per night for those anglers who indicated they spent at least one night away from their residence and personally incurred a lodging cost. Subsequently, the second category (Lodging (all)) is an estimate of mean lodging expenses across all overnight anglers, regardless of whether an angler incurred a lodging expense. Per night costs were estimated by dividing total lodging costs for the trip by the number of days the angler was away from his/her residence on the trip." Anglers that personally incurred lodging expenses spent \$58.00 on average per night in New England and \$47.00 per night in the Mid-Atlantic. "Across all overnight anglers, per night lodging expenses in New England averaged \$29.00 and in the Mid-Atlantic, \$21.00." Anglers' expenditures also included money spent on gas, travel fares, tolls, and ferry and parking fees. "One-way travel expenditures averaged \$11.00 in New England and \$8.00 in the Mid-Atlantic per trip. Therefore, if arrival costs are tantamount to departure costs, average round-trip travel expenses would approximate \$22.00 in New England and \$16.00 in the Mid-Atlantic."

Survey results show that over 50 percent of the anglers in both subregions indicated boat ownership (NE=51 percent, MA=53 percent). These results were obtained when anglers were asked if anyone living in their household owns a boat that is used for recreational saltwater fishing.

Regarding the duration of the interviewed trip, "at least 80 percent of the anglers in both subregions indicated they were on a one-day fishing trip (NE=80 percent, MA=84 percent). One-day fishing trips were defined to be trips in which an angler departs and returns on the same day. Less than one fourth of the respondents indicated the day fishing was part of a longer trip which they spent at least one night away from their residence (NE=20 percent, MA=16 percent)."

"Respondents were asked why they chose to fish at the site they were interviewed... 'Convenience' and 'better catch rates' were the main reasons why anglers chose fishing sites in both subregions. Forty-nine percent of the anglers in New England and 57 percent of the anglers in the Mid-Atlantic indicated 'convenience' as either first or second reason for site choice. 'Better catch rates' was the first or second stated reason for site choice by 51 percent of the anglers in New England and 50 percent of the anglers in the Mid-Atlantic. Other notable responses were 'always go there,' 'boat ramp,' 'access to pier,' and 'scenic beauty.'...Results indicate that although anglers chose fishing sites for many different reasons, sites that offered good catch rates and were convenient attracted the most anglers."

Recreational anglers were asked to rate recreational fishing against their other outdoor activities during the last two months. Specifically, they were asked if fishing was their most important outdoor activity, their second most important outdoor activity, or only one of many outdoor activities? "Over 60 percent of the respondents in both subregions (NE=61 percent, MA=68 percent) reported marine recreational fishing was their most important outdoor activity during the past two months. Less than 30 percent in both subregions (NE=27 percent, MA=20 percent) said recreational fishing was only one of many outdoor activities." This is consistent with national outdoor recreation surveys carried over the past three decades indicating that fishing is consistently one of the top outdoor recreational activities in terms of number of people who participate.

Recreational anglers' ratings of reasons (7 pre-established reasons) for marine fishing are presented in Table 12. More than 65 percent of the anglers in both subregions said that it was very important to go marine fishing because it allowed them to: spend quality time with friends and family (NE=81 percent, MA=85 percent); enjoy nature and the outdoors (NE=89 percent, MA=87 percent); experience or challenge of sport fishing (NE=69 percent, MA=66 percent); and relax and escape from my daily routine (NE=83 percent, MA=86 percent). "The reasons that were rated as not important by the largest proportion of anglers consisted of: catch fish to eat (NE=42 percent), to be alone (NE=55 percent, MA=58 percent), and to fish in a tournament or when awards were available (NE=79 percent, MA=73 percent). In the Mid-Atlantic, although to catch fish to eat was rated as being somewhat important by the largest

proportion of anglers (40 percent), approximately 31 percent felt that catching fish to eat was very important. However, in New England, only 20 percent concurred. It is clear from these responses that marine recreational fishing offers much more than just catching fish to anglers. Over 80 percent of the respondents in both subregions perceived recreational fishing as a time to spend with friends and family, a time to escape from their daily routine, and time to enjoy nature and outdoors. While catching fish to eat is somewhat important to anglers, findings of this survey generally concur with previous studies that found non-catch reasons are rated highly by almost all respondents while catch is very important for about a third and catching to eat fish is moderately important for about another third."

"The economic survey sought to solicit anglers opinions regarding four widely applied regulatory methods used to restrict total recreational catch of the species of fish for which they typically fish: (1) limits on the minimum size of the fish they can keep; (2) limits on the number of fish they can keep; (3) limits on the times of the year when they can keep the fish they catch; and (4) limits on the areas they fish. Anglers were asked whether or not they support or opposed the regulations." As indicated in Table 13, strong support existed for all regulatory methods in both subregions. Limits on the minimum size of fish anglers could keep generated the highest support in both regions (NE=93 percent, MA=93 percent), while limits on the area anglers can fish, although still high, generated relatively lower support (NE=68 percent, MA=66 percent).

Regulations which limit the number of fish anglers can keep ranked second (NE=91 percent, MA=88 percent). The results from this solicitation indicate that recreational anglers in the Northeast Region appear to be conservation oriented and generally support regulations employed to restrict total catch. Not surprisingly, when analyzing anglers' opinions regarding the four widely applied regulatory methods, it was found that anglers in all modes indicated strong support for the regulatory measures, with minimum size limits generating the strongest support, followed by catch limits, seasonal closures, and lastly, area closures (Table 14).

"Although party/charter, private/rental, and shore respondents did offer varying degrees of support for each of a selection of regulatory measures, similar support existed across all modes. Support was highest for common regulatory methods currently being implemented in New England and the Mid-Atlantic (e.g., size and bag limits), than for area and seasonal closures."

#### **6.4.3 Port and Community Description**

Ports and communities that are dependent on bluefish are fully described in the 2002 Bluefish Specification Document (section 4.3; MAFMC 2001) and are available via the internet at <http://www.nero.noaa.gov/ro/doc/nr02.htm>. This information has not been updated since 2001.

NMFS dealer data from 2008 were used to rank fishing ports in order of importance for bluefish commercial landings. Ten ports qualified as "top bluefish ports", i.e., those ports where 100,000 pounds or more of bluefish were landed (Table 15). Long Beach/Barnegat Light, NJ was the most important commercial bluefish port with over 0.500 M lb landed.

However, top port landings within the state of North Carolina were reported under unknown permits, and as such, were reported as confidential.

The ranking of recreational fisheries landings (numbers of fish and pounds of fish) by state in 2008 is provided in Table 16.

#### **6.4.4 Permit Data**

##### **Federally Permitted Vessels**

NMFS/NERO Federal permit data indicate that a total of 3,184 commercial and 941 recreational (party/charter) bluefish permits were issued in 2008. Among these, 466 vessels had both commercial and recreational bluefish permits.

A subset of federally-permitted vessels was active in 2008. Dealer reports indicate that 624 vessels with commercial bluefish permits actually landed bluefish. In addition, VTR data show that 111 party/charter vessels catching bluefish from Maine through North Carolina.

##### **Dealers**

There were 202 dealers who bought bluefish in 2008. They were distributed by state as indicated in Table 17. Employment data for these specific firms are not available. In 2008, these dealers bought approximately \$2.6 million worth of bluefish.

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## **7.0 ANALYSIS OF (DIRECT AND INDIRECT) IMPACTS**

Impacts of the alternatives evaluated in this specifications package on each of the VECs are discussed below.

### **7.1 Impacts of Alternative 1 (Preferred Alternative)**

#### **7.1.1 Biological Impacts**

The Council and the Board recommended a coastwide TAC of 34.376 M lb for 2010. The derivation of the TAL and its allocation to the commercial and recreational sectors are fully described in section 5.0 of the EA. The preferred alternative would set the TAL at 29.264 M lb. This TAL is less than 1 percent lower than the TAL implemented in 2009.

This alternative includes a Council-adjusted commercial quota of 10.051 M lb, and the recreational harvest limit of 18.335 M lb, after subtracting for the RSA amount of 0.878 M lb for 2010. This alternative would allow for the second greatest amount of bluefish commercial quota among all the evaluated alternatives. Council-adjusted commercial quota and recreational harvest limit associated with the TAL (29.264 M lb) under this alternative are 4 percent higher and 6 percent lower than the commercial quota and recreational harvest limit implemented in 2009, respectively.

Because the TAL associated with this alternative is based on achieving the 2008 fishing mortality in 2010 (0.15), this alternative is not, by definition, expected to increase fishing mortality for bluefish. Additionally, in setting target  $F$  at  $F_{\text{rebuild}}$ , this alternative perpetuates management consistent with the prescribed rebuilding plan for bluefish - a precautionary management approach given the possibility that the stock is already rebuilt (section 6.1 of the EA).

Under all alternatives evaluated in this EA, a transfer from the recreational sector to the commercial sector was made (section 5.0 of the EA). A significant portion of bluefish commercial landings are bycatch (MAFMC 1990). If the transfer from the recreational fishery to the commercial fishery was not made, large quantities of bluefish would be discarded by commercial fishermen. Therefore, the mortality of bluefish would not be reduced and fish would be wasted.

Based on recreational landings projections available when this document was prepared, assuming the transfer of the quota from the commercial fishery to the recreational fishery and the RSA amount employed to analyze all alternatives in the document, resulted in a Council-adjusted recreational harvest limit of 18.335 M lb, which is slightly higher than the projected recreational landings for 2010 (18.900 M lb; section 4.3 of the EA). Nevertheless, it is not expected that the combined commercial and recreational landings in 2010 will surpass the TAL established under this alternative (i.e., coastwide commercial landings are consistently below



the limit established by the quota). It is important to stress that the RSA amount used to evaluate the alternatives presented in this document is the maximum RSA allowed (3 percent of the TAL) to support collaborative research projects among the public, research institutions, and NMFS. The actual RSA for fishing year 2010 will depend on the specific amounts requested by the approved research projects. NMFS will adjust quotas based on updated information on RSA, overages and/or transfers as part of the final rule that implements the 2010 specifications when the data are more complete.

With regard to impacts on other federally-managed species, bluefish are caught primarily through recreational hook and line fishing, however, the smaller commercial bluefish fishery typically operates as a mixed-species gillnets and otter trawl fishery with harvest including bonito, Atlantic croaker, weakfish, and spiny dogfish (MAFMC 2001). The expected slight increase in commercial quota under Alternative 1 is not anticipated to greatly increase overall directed fishing effort on bluefish relative to No Action (Alternative 3), or in excess of levels observed in previous years of the rebuilding period. Fishing mortality on non-target species is also not expected to greatly increase relative to Alternative 3.

The TAL under this alternative was recommended by the Council and Board and is likely to achieve the target  $F$  in 2010. Overall this alternative would be expected to positively affect the bluefish stock because the  $F_{\text{target}}$  would allow for additional rebuilding of the stock

### **7.1.2 Habitat Impacts**

Bluefish are caught primarily through hook and line recreational fishing, which has not been implicated in having effects on EFH for any federally-managed species. In the commercial fishery, impacts to benthic EFH are greatest for bottom trawls, lowest for hook and line, and intermediate for bottom gillnets.

This preferred alternative would increase the commercial quota by 5 percent relative to 2009. Because this alternative would make it possible for commercial fishermen to land more bluefish, there could be an increase in commercial bottom trawling activity and a corresponding increase in adverse impacts on EFH for demersal species of fish managed by other FMPs (Table 18). (Since bluefish are pelagic species, bluefish EFH is not vulnerable to mobile, bottom-tending gear). However, the habitat impacts of Alternative 1 are not anticipated to differ significantly from the No Action alternative because only a small percentage of the directed commercial landings are taken in bottom trawls (13.5 percent in 2008, Table 3). Furthermore, because bluefish are caught incidentally as a non-target species in the commercial trawl fishery, the historic response by the commercial bluefish fishery to increases in fishing opportunity has not generally been to increase landings or bottom trawling effort. If there is an increase in the landings of bluefish taken by commercial trawlers in 2010, it is likely that other gears, especially gill nets, will account for most of any increased directed commercial fishing activity. If an increase in the quota results in an increase in trawl gear contacting the seafloor, there is a potential for low negative impacts to occur. Given the low

probability that a 5 percent increase in the commercial quota for bluefish in 2010 would cause any significant increase in adverse impacts to benthic habitats, this action is expected to continue to minimize the adverse effects of this fishery on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA.

### **7.1.3 Impacts on Endangered and Other Protected Species**

Endangered and other protected species are addressed in section 6.3 of the EA. The range of these species overlaps with bluefish, and as such, a potential for incidental catch always exists. Except in unique situations, such incidental catches should have a negligible impact on marine mammals or abundances of endangered species. NMFS completed a formal section 7 consultation on the implementation of the bluefish FMP in 1999. The accompanying opinion concluded that the fishery would not jeopardize but may adversely affect some ESA-listed species.

The measures under this alternative do not contain major changes to existing management measures. As such, overall fishing effort is not expected to increase substantially (Table 18), and this alternative is not expected to increase the likelihood of interactions between the bluefish fishery, marine mammals, sea turtles, or other protected resources or their respective habitats.

### **7.1.4 Socioeconomic Impacts**

Alternative 1 would set the TAL at 29.264 M lb. The preferred alternative includes a Council-adjusted commercial quota of 10.051 M lb, an RHL of 18.335 M lb, and an RSA of 0.878 M lb for 2010. Under this alternative, the allocations to the commercial and recreational fisheries are approximately 5 percent higher and 3 percent lower than the commercial quota and recreational harvest limit under the status quo alternative, respectively (Alternative 3).

Because of the increase commercial quota, Alternative 1 would provide commercial fishermen with more fishing opportunities in 2010 compared to 2009, therefore, positive socioeconomic impacts would be expected. Stable or increased landings from one year to the next are desirable from an industry perspective. Increased fishing opportunity provides fishermen, processors, party/charter boat operators, equipment and bait suppliers with increase income potential. The adjusted recreational harvest limit for 2010 is expected to allow for slightly lower recreational fishing opportunities in 2010 compared to 2009. The derivation of the commercial quota and recreational harvest limit for this as well as the other alternatives is described in detail in sections 4.3 and 5.0 of the EA.

New quotas alone have relatively limited social impacts. The changes in social structure and cultural fabric that may have occurred under implementation of limited access are already largely in place. The major impact of quota increases is on profitability. Only where there are significant reductions in net revenues or in the ability to meet costs are adverse social impacts

likely. This would not be expected under Alternative 1 since the quota would increase. The 2010 commercial quota under Alternative 1 would be allocated proportionally to states as indicated in Table 19.

A description of ports and communities is found in the 2002 Bluefish Specifications Document (MAFMC 2001). Additionally, the “top bluefish ports” that landed bluefish in 2008 are identified in section 6.4.3 of the EA.

### *Commercial Impacts*

#### Vessels affected by Alternative 1

The analysis of the harvest levels under this alternative indicates that the economic impacts ranged from no change in revenues for 493 vessels to revenue losses of  $\geq 5$  percent for 9 vessels. More specifically, 6 vessels were projected to incur revenue losses of 5-9 percent and 3 vessels of 10-19 percent. In addition, 124 vessels were projected to incur revenue losses of less than 5 percent (Table 20). While the analysis presented above indicates that in relative terms a small number of vessels (9) are likely to be impacted with revenue reductions of more than 5 percent or more, 56 percent of these vessels (5 vessels) had gross sales of \$1,000 or less and 89 percent of the impacted vessels (8 vessels) had gross sales of \$10,000 or less, thus likely indicating that the dependence on fishing for some of these vessels is very small. Furthermore, no revenue reduction is expected for vessels that land bluefish in North Carolina and Florida as a consequence of the proposed 2010 quota compared to 2008 landings in those states. A detailed description of how economic impacts were estimated for all evaluated alternatives is presented in sections 3.1 and 5.0 of the RIR/IRFA. Additional analysis regarding these vessels is presented below (e.g., evaluation of permit status, geographic distribution of permitted vessel).

Of the 9 vessels projected to have revenue reductions of  $\geq 5$  percent, 7 are identified as holders of Federal permit (Table 21). It is possible that the remaining 2 vessels that do not show having any Federal permits in 2008 have opted for fishing in state waters only and as such, did not renew Federal permits in 2008, or have ceased business. Many of these vessels hold permits in various fisheries (Table 22) -- especially commercial permits for squid-mackerel-butterfish, dogfish, tilefish, skate, and monkfish. As a result, they have access to some alternative fisheries, although some like multi-species are already under heavy regulation and are likely to have increasingly stringent catch limits in the near future.

All of the impacted vessels (revenue reduction of  $\geq 5$  percent) with Federal permits have home ports in New York and their principal ports of landings are also mainly located in New York (Table 23). Although the bluefish quota is allocated to the individual states, vessels are not necessarily constrained to land in their home state. It is useful, therefore, to examine the degree to which vessels from different states make it a practice to land in states other than their home state. Table 23 indicates that all of these vessels are likely to land in their home port

state. This information is important because impacts will occur both in the community of residence and in the community where the vessel's catch is landed and sold. The average length of these vessels by principal port is 36 feet (Table 23). Larger vessels often have more options than smaller vessels, due to increased range and more deck space for alternative gear configurations. This can help them to respond to cuts in quota in particular states. They also, however, need larger volumes of product to remain profitable.

As indicated above, all commercial vessels showing revenue reductions in the  $\geq 5$  percent range are concentrated in New York. Within this state, the most impacted county (largest number of impacted vessels) is Suffolk county in New York (Table 24). Counties not included in this analysis (e.g., Nassau and New York, NY) did not have enough impacted vessels to meet the criteria specified, i.e., there were less than 4 impacted vessels per county, or all impacted vessels in a state were not home ported within the same county. In fact, these counties only had one or two affected vessel. If communities having larger numbers of impacted vessels also have a larger total numbers of vessels, the proportion that may be impacted thus may be lower. This effect may mitigate the impacts on the community as a whole.

To further characterize the potential impacts on indirectly impacted entities and the larger communities within which owners of impacted vessels reside, selected county profiles were constructed. Each profile is based on impacts under the most restrictive possible alternative. The most restrictive alternative is chosen (Alternative 3) to identify impacted counties because it would identify the maximum number possible and thus, include the broadest possible range of counties in the analysis. Reported statistics including demographic statistics, employment, and wages for these counties are presented in section 6.1 of the RIR/IRFA. In addition, a description of important ports and communities are fully described in the 2002 Bluefish Specifications Document (MAFMC 2001). Additionally, the "top bluefish ports" that landed bluefish in 2008 are identified in section 6.4.3 of the EA.

The changes described above are based on the potential changes in landings associated with the 2010 quotas versus 2008 landings (section 5.1 of the RIR/IRFA). Amendment 1 implemented a transfer provision as a tool to mitigate the adverse economic impacts of prematurely closing a fishery when surplus quota exists. In fact, under the Interstate Management Plan for Atlantic Bluefish, states have been very cooperative in transferring commercial bluefish quota when needed to states that are running a deficit. If quota allocations were to be transferred from a state or states that do not land their entire bluefish quota allocation for 2010 then the number of affected entities described in this threshold analysis could potentially decrease and thus, decrease economic burden under this alternative as well as under Alternatives 2 and 3.

This alternative was chosen by the Council because it is associated with a more risk-averse F target for 2010 when compared to Alternative 2. However, the potential economic losses associated with this alternative are higher than those under Alternative 2 but lower than those under Alternative 3.

### *Recreational Impacts*

Under Alternative 1, the Council-adjusted bluefish 2010 recreational harvest limit would be 18.335 M lb. This limit would be approximately 3 percent below the recreational landings for 2008 (18.900 M lb) and 6 percent below the limit implemented for 2009 (19.528 M lb). The possession limit would remain at 15 fish. In this document it is suggested that the recreational landings for 2008 be applied to 2010 for calculation of the recreational harvest limit as a placeholder until a projection can be made when more complete data are available (sections 1.0 and 4.3 of the EA). Recreational landings in 2008 (18.900 M lb) are not radically different from average recreational landings for the past five years (see Section 6.1, Table 1). The proposed adjusted recreational harvest limit under this alternative is near identical (less than 3 percent lower) than the projected recreational landings for 2010. There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the Council-adjusted recreational harvest limit for 2010 and recreational landings in recent years, it is possible that the proposed recreational harvest limit under this alternative may cause some slight decrease in recreational satisfaction (i.e., 2010 harvest limit slightly lower than projected 2010 recreational landings). Note: It is possible that future update of recreational landings projections done by the NMFS (when more data is available, e.g., following wave 5 of the MRFSS data) could result in adjustment transfers different from those presented in this specifications package (section 4.3 of the EA).

There is no information regarding how the potential decrease in the recreational harvest limits for this species will affect the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable; however, it is possible that given the proposed recreational harvest limits associated with this alternative, the demand for party/charter boat trips may be slightly negatively impacted. Some anglers may that choose to reduce their effort in 2010 as a consequence of the recreational harvest limit are likely to transfer this effort to alternative species (i.e., spot, weakfish, striped bass, tautog, pelagics, etc.) resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing.

### *Other Impacts*

#### Effects of the research set-aside

The economic analysis regarding changes in the commercial TALs for the bluefish fishery conducted under this alternative, as well as the other alternatives analyzed, incorporated adjustments for the quota specifications for 2010 (Alternative 4.2). That is, the RSA for bluefish was deducted from the recreational harvest limit and commercial quota in an amount

proportional to the overall bluefish TAL for 2010 to derive Council-adjusted 2010 quotas and limits on recreational harvest. Therefore, the threshold analyses conducted under each alternative have accounted for overall reductions in fishing opportunities in 2010 available to all vessels typically participating in this fishery due to RSA. This methodology would overestimate potential revenue losses for vessels participating in these fisheries, as the overall TAL for the fishery was adjusted downward due to RSA that will be available only to vessels participating in RSA projects (i.e., specifically for vessels fishing in states where the quota have constrained landings in the last few years). Since the bluefish RSA is made available to vessels participating in the RSA projects only, and these vessels have the opportunity to harvest bluefish under the RSA projects as well as under the normal TALs for this species as well, it is possible that the projected revenue losses under the alternatives evaluated could potentially be smaller for some vessels participating in the 2010 RSA projects. This would be particularly true under the assumption that 2010 allocations to a particular state represent harvest constraints to the commercial fishery. Given the substantial increase in the fishing opportunity associated with the 2010 commercial quotas relative to 2008 landings under Alternative 1 (2<sup>nd</sup> least restrictive commercial quota), the cost of any premature closure of the fishery (pounds of bluefish allocated for set-aside) would be shared among the non research set-aside participants in the fishery.

## **7.2 Impacts of Alternative 2 (Presumes Stock is Rebuilt)**

### **7.2.1 Biological Impacts**

Under this alternative, a TAC of 38.676 M lb for 2010 is assumed. The derivation of the TAL and its allocation to the commercial and recreational sectors are fully described in section 5.0 of the EA. This alternative would set the TAL at 33.563 M lb. This TAL is 14 percent higher than the TAL implemented in 2009. Non-preferred 2 would allow for the bluefish stock to be fished at 90% of  $F_{MSY}$  ( $F = 0.17$ ) as opposed to  $F_{rebuild}$  (0.15) during the rebuilding phase.

This alternative includes a Council-adjusted commercial quota of 10.185 M lb, and the recreational harvest limit of 22.371 M lb, after subtracting for the RSA amount of 1.007 M lb for 2010. This alternative would allow for the greatest amount of bluefish commercial quota among all the evaluated alternatives. Council-adjusted commercial quota and recreational harvest limit associated with the TAL (33.563 M lb) under this alternative are 5 percent and 15 percent higher, respectively, than the commercial quota and recreational harvest limit implemented in 2009.

The increase in commercial quota under Alternative 2 would not incur risk to stock sustainability. Nevertheless, Alternative 2 is associated with the greatest removal of bluefish from the stock relative to the other alternatives under consideration. Fishing mortality on non-target species is also not expected to increase significantly. Coastwide commercial landings are consistently below the limit established by the quota, possibly rendering this slight increase as inconsequential to the target and non-target species. The Council, however, rejected this

alternative in keeping with the SSC's recommendation for a more risk-averse F target (i.e., Alternative 1) for 2010.

### **7.2.2 Habitat Impacts**

Because the commercial quota under Alternative 2 would be essentially the same (5 percent higher) than the commercial quota implemented in 2009, status quo impacts on EFH related to the commercial harvest of bluefish are not expected to change (Table 18). Adverse habitat impacts in this fishery are primarily associated with bottom trawling. Because there is no significant directed trawl fishery for bluefish (Table 3), bottom trawling activity is related to the availability and market value of other species and would not be affected by a small change in the commercial bluefish quota. The baseline impacts of the bluefish fishery on EFH have been characterized and, as stated in section 6.2.4 of the EA, are minimal and temporary in nature. Because impacts on bottom habitats would not change under this alternative, it would continue to minimize the adverse effects of this fishery on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA.

### **7.2.3 Impacts on Endangered and Other Protected Species**

Endangered and other protected species are addressed in section 6.3 of the EA. The range of these species overlaps with bluefish, and as such, a potential for incidental catch always exists. Except in unique situations, such incidental catches should have a negligible impact on marine mammals or abundances of endangered species, and NMFS has concluded in previous consultations that implementation of this FMP will not have an adverse impact upon these populations.

The measures under this alternative could marginally increase commercial bluefish fishing effort and, as such, could increase the likelihood of interactions between the bluefish fishery, marine mammals, sea turtles, or other protected resources or their respective habitats. However as stated above, the rare incidental catch would have negligible impact on this VEC.

### **7.2.4 Socioeconomic Impacts**

The same overall discussion regarding the social impacts of quotas and characterization of the bluefish fisheries by port and community presented under Alternative 1 (section 7.1.4 of the EA) also apply here.

Alternative 2 would set the TAL at 33.563 M lb. This TAL includes a Council-adjusted commercial quota of 10.185 M lb, an RHL of 22.371 M lb, and an RSA of 1.007 M lb for 2010. Under this alternative, the allocations to the commercial and recreational fisheries are approximately 7 percent and 18 percent higher, respectively, than the commercial quota and recreational harvest limit under the status quo alternative (Alternative 3), resulting in high positive socioeconomic impacts.

The state-by-state quota allocation for 2010 under Alternative 2 is shown in Table 19. The commercial quota allocation under this alternative would provide commercial fishermen with higher fishing opportunities in 2010 compared to the status quo alternative (Alternative 3).

### *Commercial Impacts*

#### Vessels affected under the most restrictive alternative (Alternative 2)

The analysis of the harvest levels under this alternative indicates that the economic impacts ranged from no change in revenues for 493 vessels to revenue losses of  $\geq 5$  percent for 7 vessels. More specifically, 4 vessels were projected to incur revenue losses of 5-9 percent and 3 vessels of 10-19 percent. In addition, 126 vessels were projected to incur revenue losses of less than 5 percent (Table 25). While the analysis presented above indicates that in relative terms a small number of vessels (7) are likely to be impacted with revenue reductions of more than 5 percent or more, 71 percent of these vessels (5 vessels) had gross sales of \$1,000 or less and 100 percent of the impacted vessels (7 vessels) had gross sales of \$10,000 or less, thus likely indicating that the dependence on fishing for some of these vessels is very small. Furthermore, no revenue reduction is expected for vessels that land bluefish in North Carolina and Florida as a consequence of the proposed 2010 quota compared to 2008 landings in those states.

Of the 7 vessels projected to have revenue reductions of more than 5 percent, 6 (86 percent) hold permits in other fisheries (Table 26). It is possible that the remaining 1 vessel that do not show having any Federal permits in 2008 has opted for fishing in state waters only and as such, did not renew Federal permits in 2008, or has ceased business. In particular, most vessels have monkfish, squid-mackerel-butterfish, dogfish, skates, and tilefish permits (Table 27). As a result, they have access to some alternative fisheries, although some like multispecies and scallops are already under heavy regulation and are likely to have increasingly stringent catch limits in the near future.

All of the impacted vessels with Federal permits for bluefish have home ports in New York. The principal ports of landing for these vessels are mainly located in New York as well (Table 28). Although the bluefish quota is allocated to the individual states, vessels are not necessarily constrained to land in their home state. It is useful, therefore, to examine the degree to which vessels from different states make it a practice to land in states other than their home state. Table 28 indicates that all of these vessels are likely to land in their home port state. This information is important because impacts will occur both in the community of residence and in the community where the vessel's catch is landed and sold. The average length of these vessels by principal port is 37 feet (Table 28). Larger vessels often have more options than smaller vessels, due to increased range and more deck space for alternative gear configurations. This can help them to respond to cuts in quota in particular states. They also, however, need larger volumes of product to remain profitable.



As indicated above, all commercial vessels showing revenue reductions in the  $\geq 5$  percent range are concentrated in New York. Within this state, the most impacted county (largest number of impacted vessels) is Suffolk county in New York (Table 29). Counties not included in this analysis (e.g., Nassau, NY) did not have enough impacted vessels to meet the criteria specified, i.e., there were less than 4 impacted vessels per county, or all impacted vessels in a state were not home ported within the same county. If communities having larger numbers of impacted vessels also have a larger total numbers of vessels, the proportion that may be impacted thus may be lower. This effect may mitigate the impacts on the community as a whole.

As previously discussed, if quota allocations were to be transferred from a state or states that do not land their entire bluefish quota allocation for 2010 then the number of affected entities described in this threshold analysis could potentially decrease and thus, decrease economic burden.

This alternative was not chosen by the Council because it is not associated with a more risk-averse F target for 2010 when compared to Alternative 1. However, the potential economic losses associated with this alternative are lower than those under Alternatives 1 and 3.

#### *Recreational Impacts*

Under Alternative 2, the bluefish 2010 recreational harvest limit would be 22.371 M lb. This limit would be approximately 18 percent higher than the recreational landings for 2008 (18.900 M lb) and 15 percent larger than the recreational harvest limit for 2009 (19.528 M lb). The possession limit would remain at 15 fish. Assuming 2010 projected recreational landings of 18.900 M lb (section 7.1.4 above); the proposed Council-adjusted recreational harvest limit under this alternative is 18 percent higher than the projected recreational landings for 2010. It is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips.

#### *Other Impacts*

##### Effects of the research set-aside

The impacts described in Alternative 1 above (section 7.1.4) also apply here.

### **7.3 Impacts of Alternative 3 (No Action, Status Quo)**

#### **7.3.1 Biological Impacts**

The TAL proposed under the status quo alternative is, by definition, equivalent to the current year TAL (29.356 M lb). This would result in an initial commercial quota of 4.991 M lb and an RHL of 24.366 M lb. Assuming a transfer from the recreational fishery to the commercial

fishery similar to the transfer that occurred in 2009 (4.838 M lb) would result in an adjusted commercial quota of 9.829 M lb and an RHL of 19.528 M lb. Adjusting these values for RSA (0.881 M lb) would result in a Council-adjusted commercial quota to 9.534 M lb and an RHL of 18.942 M lb. Council-adjusted commercial quota and recreational harvest limit associated with the TAL (29.356 M lb) under this alternative are 2 percent and 3 percent lower, respectively, than the commercial quota and recreational harvest limit implemented in 2009. Even though the TAL under Alternative 3 is the status quo measure, the 2010 Council-adjusted bluefish commercial quota and recreational harvest limit are slightly different (lower) than the adjusted quota and recreational harvest limit implemented in 2009 mainly due to differences between the RSA amounts used to adjust the TALs between those two time periods. The Council rejected this alternative because it would yield lower commercial fishing opportunities when compared to preferred Alternative 1.

The biological impacts from this alternative would be positive because the  $F_{target}$  would be set more conservatively than the rebuilding  $F$ , allowing for additional growth in the bluefish biomass

### **7.3.2 Habitat Impacts**

Adverse habitat impacts in this fishery are primarily associated with bottom trawling. Because there is no significant directed trawl fishery for bluefish (Table 3), bottom trawling activity is related to the availability and market value of other species and could either increase or decrease if a bluefish quota similar to that implemented in 2009 remains in place. Therefore, the status quo alternative would have no adverse habitat impact. EFH impacts associated with the bluefish fishery were determined to be minimal and therefore consistent with the baseline impacts of the fishery that were assessed in the 2004 Annual Specifications EA (section 6.2.3). Therefore, this action would continue to minimize the adverse effects of this fishery on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA.

### **7.3.3 Impacts on Endangered and Other Protected Species**

Endangered and other protected species are addressed in section 6.3 of the EA. The range of these species overlaps with bluefish, and as such, a potential for incidental catch always exists. Except in unique situations, such incidental catches should have a negligible impact on marine mammals or abundances of endangered species, and NMFS has concluded in previous consultations that implementation of this FMP will not have an adverse impact upon these populations.

The measures under this alternative would maintain commercial bluefish fishing effort and, as such, are not expected to affect the likelihood of interactions between the bluefish fishery, marine mammals, sea turtles, or other protected resources or their respective habitats.

### **7.3.4 Socioeconomic Impacts**

The same overall discussion regarding the social impacts of quotas and characterization of the bluefish fisheries by port and community presented under Alternative 1 (section 7.1.4 of the EA) also apply here.

Alternative 3 (status quo) would set the TAL at 29.356 M lb. This TAL includes a Council-adjusted commercial quota of 9.534 M lb, an RHL of 18.942 M lb, and an RSA of 0.881 M lb for 2010. Under this alternative, the allocations to the commercial and recreational fisheries are approximately 2 percent and 3 percent lower than the commercial quota and recreational harvest limit implemented in 2009, respectively. Note that even though the TAL under this alternative is identical to the TAL implemented in 2009 (status quo measure), the 2010 Council-adjusted commercial quota and recreational harvest limit are slightly different than the limits implemented in 2009 mainly due to differences in the RSA amounts deducted from the two time periods.

The state-by-state quota allocation for 2010 under Alternative 3 is shown in Table 19. The overall commercial quota allocation under this alternative (status quo) would maintain consistent commercial and recreational fishing opportunities in 2010 compared to 2009. The potential commercial fishing opportunities under this alternative are lower than those under Alternatives 1 and 2. Because this alternative would maintain status quo management measure, it is associated with null (neither positive nor negative) socioeconomic impacts.

#### *Commercial Impacts*

##### Vessels affected under the status quo alternative (Alternative 3)

The analysis of the harvest levels under this alternative indicates that the economic impacts ranged from no change in revenues for 493 vessels to revenue losses of  $\geq 5$  percent for 12 vessels. More specifically, 8 vessels were projected to incur revenue losses of 5-9 percent, 1

vessel of 10-19 percent, and 3 vessels of 20-29 percent. In addition, 121 vessels were projected to incur revenue losses of less than 5 percent (Table 30). While the analysis presented above indicates that in relative terms a small number of vessels (12) are likely to be impacted with revenue reductions of more than 5 percent or more, 42 percent of these vessels (5 vessels) had gross sales of \$1,000 or less and 75 percent of the impacted vessels (9 vessels) had gross sales of \$10,000 or less, thus likely indicating that the dependence on fishing for some of these vessels is very small. Furthermore, no revenue reduction is expected for vessels that land bluefish in North Carolina and Florida as a consequence of the proposed 2010 quota compared to 2008 landings in those states.

Since Alternative 3 is the most restrictive alternative (i.e., most restrictive commercial quota), impacts of other alternatives will be less than the impacts under this alternative.

Of the 12 vessels projected to have revenue reductions of more than 5 percent, 8 (67 percent) hold permits in other fisheries (Table 31). It is possible that the remaining 4 vessels that do not show having any Federal permits in 2008 have opted for fishing in state waters only and as such, did not renew Federal permits in 2008, or has ceased business. In particular, most vessels have monkfish, squid-mackerel-butterfish, dogfish, skates, and tilefish permits (Table 32). As a result, they have access to some alternative fisheries, although some like multispecies and scallops are already under heavy regulation and are likely to have increasingly stringent catch limits in the near future.

All of the impacted vessels with Federal permits for bluefish have home ports in New York. The principal ports of landing for these vessels are mainly located in New York as well (Table 33). Although the bluefish quota is allocated to the individual states, vessels are not necessarily constrained to land in their home state. It is useful, therefore, to examine the degree to which vessels from different states make it a practice to land in states other than their home state. Table 33 indicates that all of these vessels are likely to land in their home port state. This information is important because impacts will occur both in the community of residence and in the community where the vessel's catch is landed and sold. The average length of these vessels by principal port is 37 feet (Table 33). Larger vessels often have more options than smaller vessels, due to increased range and more deck space for alternative gear configurations. This can help them to respond to cuts in quota in particular states. They also, however, need larger volumes of product to remain profitable.

As indicated above, all commercial vessels showing revenue reductions in the  $\geq 5$  percent range are concentrated in New York. Within this state, the most impacted county (largest number of impacted vessels) is Suffolk county in New York (Table 34). Counties not included in this analysis (e.g., Nassau and New York, NY) did not have enough impacted vessels to meet the criteria specified, i.e., there were less than 4 impacted vessels per county, or all impacted vessels in a state were not home ported within the same county. If communities having larger numbers of impacted vessels also have a larger total numbers of vessels, the

proportion that may be impacted thus may be lower. This effect may mitigate the impacts on the community as a whole.

As previously discussed, if quota allocations were to be transferred from a state or states that do not land their entire bluefish quota allocation for 2010 then the number of affected entities described in this threshold analysis could potentially decrease and thus, decrease economic burden.

The commercial losses associated with this alternative are slightly higher than in Alternatives 1 and 2.

### *Recreational Impacts*

Under Alternative 3, the bluefish 2010 recreational harvest limit would be 18.942 M lb. This limit would be near identical (less than 1 percent higher) than the recreational landings for 2008 (18.900 M lb) and near identical (3 percent below) the limit implemented for 2009 (19.528 M lb). The possession limit would remain at 15 fish. Assuming 2010 projected recreational landings of 18.900 M lb (section 7.1.4 of the EA); the proposed Council-adjusted recreational harvest limit under this alternative is near identical than the projected recreational landings for 2010. It is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips.

### Effects of the research set-aside

The impacts described in Alternative 1 above (section 7.1.4) also apply here.

## **7.4 Impacts of the RSA Alternatives 4.1 and 4.2**

Framework Adjustment 1 to the Bluefish FMP established a program in which research projects can be funded through the sale of fish that has been set-aside from the total annual quota. Through the Mid-Atlantic Research Set-Aside (RSA) Program the Council encourages collaborative efforts between the public, research institutions, and government agencies in broadening the scientific base upon which management decisions are made. Reserving a small portion of the annual harvest as research set-aside quota to subsidize the research costs of vessel operations and scientific expertise is considered an important investment in the future of the nation's fisheries.

In addition, the Mid-Atlantic RSA Program assures that research endeavors selected and funded under this program will receive the peer review and analysis necessary to be utilized in improving the management of public fisheries resources. The annual research set-aside amount may vary between 0 and 3% of each species' quota. For those species that have both a commercial quota and a recreational harvest limit, the set-aside calculation shall be made from the combined total allowable landing level.

#### **7.4.1 Alternative 4.1 - No Action (No Research Set-Aside)**

Under this alternative no RSA would be implemented for 2010.

##### **7.4.1.1 Environmental Impacts, Not Including Socioeconomic Impacts**

Under this alternative there would not be a bluefish RSA implemented for 2010. Because all bluefish landings would count against the overall quota whether or not a RSA is implemented, the biological/ecological impacts would not change relative to the status quo. Nevertheless, there would also be no indirect benefit from information gained through the research set-aside program if the no action alternative is implemented.

##### **7.4.1.2 Socioeconomic Impacts**

Under this alternative there would be no RSA deducted from the overall TAL. Therefore, the initial commercial quota and recreational harvest limit do not need to be adjusted downward as would be done under a situation when an RSA is established.

In fisheries where the entire quota would be taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of the program are shared among the non-RSA participants in the fishery. That is, each participant in a fishery that utilizes a resource that is limited by the annual quota relinquishes a share of the amount of quota retained in the RSA quota. Since no research set-aside is implemented under this alternative, there are no direct economic or social costs as described above.

The socioeconomic discussion of the commercial quotas discussed in sections 7.1.4, 7.2.4, and 7.3.4 of the EA was based on adjusted commercial quotas that accounted for the currently requested RSA amount (section 7.4.2 of the EA). More specifically, an RSA of 0.878, 1.007, and 0.881 M lb were used to derive the Council-adjusted commercial quotas and recreational harvest limits in all evaluated alternatives.

Tables 19 and 35 show the potential impacts of the three commercial quotas evaluated for 2010. These impacts are associated with the specific changes associated with the 2010 Council-adjusted quota compared to the 2008 landings.

For example, under Alternative 1 the states of New York show a potential decrease in landings when the 2010 quota is compared to the 2008 landings (Table 35). If commercial quotas not adjusted for RSA are considered, the potential decrease in landings associated with the 2010 quotas compared to the 2008 landings would change by less than 3 percent for that state. In other words, the additional amount of bluefish available in that state to non-research participants in that state under Alternative 1 would be 32,283 lb. Therefore, since there is a small additional amount of bluefish available to non-RSA participants under this alternative compared to the status quo (section 7.4.2 of the EA), the economic impacts discussed under the

commercial quota alternatives adjusted for RSA would be slightly smaller than those discussed under sections 7.1.4, 7.2.4, and 7.3.4 of the EA.

Changes in the recreational harvest limit due to the RSA would be small; the recreational limit under all there alternatives would change (i.e., reduction) by 3 percent as a consequence of the RSA. For the most part, it is not anticipated that the RSA would affect angler satisfaction or recreational demand for bluefish with the potential exception of Alternative 1 (section 7.4.2.4 below).

Under non-preferred Alternative 4.1, the collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made will cease. In addition, the Nation will not receive the benefit derived from data or other information about these fisheries for management or stock assessment purposes.

#### **7.4.2 Alternative 4.2 - Specify a Research Set-Aside for 2010 (Status Quo Alternative)**

The Council has recommended that 3-percent of the 2010 bluefish quota, which is 844,680 lb, be set-aside to fund projects selected under the 2010 Mid-Atlantic RSA Program. The project selection and award process for the 2010 Mid-Atlantic RSA Program has not concluded and therefore, the bluefish research quota award is not known. If any portion of the research quota is not awarded, NMFS will return any un-awarded set-aside amount to the commercial fishery either through the 2010 bluefish specification rulemaking process or through the publication of a separate notice in the *Federal Register* notifying the public of a quota adjustment.

##### **7.4.2.1 Biological Impacts**

Because the bluefish RSA quota is a sub-part of the overall quota, no additional bluefish mortality would occur if this alternative is adopted. If any portion of the 3-percent bluefish RSA quota is not awarded to an RSA project, the remainder will be returned to the commercial quota.

The only anticipated difference between vessels harvesting bluefish under the RSA quota and vessels harvesting bluefish under the commercial quota is that RSA vessels would be authorized to do so during quota closures. Because quota closures may or may not occur during a given fishing year, RSA quota compensation fishing will have no additional effects beyond those assessed for the commercial fishery under alternative 5.4.1.

##### **7.4.2.2 Habitat Impacts**

Because all bluefish landings count against the overall quota regardless of whether or not an RSA is implemented, neither alternative is expected to change the level of fishing effort for these species. In addition, it is not expected that effort will be redistributed by gear type or change the manner in which these fisheries are prosecuted under either alternative.

Although under Alternative 2 exemptions would be issued for compensation fishing that would exempt vessels from possession limits and quota closures, there would be no additional impacts on habitat because RSA quota is part of, and not in addition to, the overall bluefish quota. As such, this alternative will likely minimize the adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSA.

#### **7.4.2.3 Impacts on Endangered and Other Protected Species**

Because all bluefish landings count against the overall quota regardless of whether or not an RSA is implemented, this alternative is not expected to change the level of fishing effort for these species.

Vessels harvesting research quota in support of approved research projects would be issued exempted fishing permits authorizing them to exceed Federal possession limits and to fish during Federal quota closures. These exemptions are necessary to allow project investigators to recover research expenses as well as adequately compensate fishing industry participants harvesting research quota. Vessels harvesting research quota would operate within all other regulations that govern the commercial fishery, unless otherwise exempted through a separate exempted fishing permit. Because quota closures may or may not occur during a given fishing year, exemption from these closures will have no additional environmental impact. Exemption from possession limits could result in compensation fishing vessels altering their normal fishing behavior; extending tow duration or fishing longer than they otherwise would for example. However, this slight alteration in fishing behavior is not expected to have any impact on protected resources.

Therefore, this alternative is not expected to negatively affect endangered and threatened species or critical habitat in any manner not considered in prior consultations on these fisheries nor will have any adverse impacts on marine animals or other protected resources.

#### **7.4.2.4 Socioeconomic Impacts**

Under Council-preferred Alternative 4.2, an RSA for this species would be specified. Under the RSA program, successful applicants receive a share of the annual quota for the purpose of conducting scientific research. However, as described above, the economic and social costs of the program are shared among the non-RSA participants in the fishery. The evaluation of the socioeconomic impacts of the commercial quotas in sections 7.1, 7.2, and 7.3 was based on adjusted commercial quotas that account for the RSA proposed under Council-preferred Alternative 4.2.

The MAFMC recommended research set-aside quota of up to 3 percent of the bluefish TAL for 2010. As indicated above, this would result in RSAs of up to 0.878, 1.007, and 0.881 M lb Alternatives 1, 2, and 3, respectively. Preliminary NMFS dealer data from Maine through



Virginia and South Atlantic General Canvass data were used to derive the ex-vessel price for bluefish from Maine through Florida's east coast. The ex-vessel price for bluefish in 2008 was estimated at \$0.44/lb. Assuming this ex-vessel price, the 2010 RSA for the commercial component of the fishery, using the full 3 percent of the TAL, could be worth as much as \$0.137 M under Alternative 1, \$0.139 M under Alternative 2, and \$0.130 under Alternative 3.

As such, on a per vessel basis, the commercial RSA could result in a potential decrease in bluefish revenues of approximately \$76, \$77, or \$72 under Alternatives 1, 2, and 3, respectively, per vessel assuming all active vessels in 2008 (approximately 1,800 vessels). The adjusted commercial quotas analyzed in sections 7.1, 7.2, and 7.3 account for the RSA (as described in sections 4.3 and 5.0 of the EA). If RSA is not used, the landings would be included in the overall TAL for each fishery. As such, the estimated economic impacts would be smaller than those estimated under each alternative discussed in sections 7.1 through 7.4.

Changes in the recreational harvest limit due to the RSA would be nil; the recreational limit under all these alternatives would change (i.e., reduction) by 3 percent as a consequence of the RSA. For the most part, it is not anticipated that the RSA would affect angler satisfaction or recreational demand for bluefish with the potential exception of Alternative 1. As stated section 5.1 of the EA, the TAC associated with Alternative 1 is 34.376 M lb, the initial commercial quota and recreational harvest limit (post transfer) under Alternative 1 is 10.362 M lb and an RHL of 18.902 M lb, respectively. The Council approved an RSA for bluefish of up to 3 percent of the TAL. Adjusting these values for RSA (0.878 M lb) would result in a Council-adjusted commercial quota of 10.051 M lb and an RHL of 18.335 M lb. As such, adjusting the initial commercial quota and recreational harvest limits to reflect a 3 percent reduction in the TAL as a consequence of the RSA would yield a Council-adjusted recreational harvest limit slightly below the preliminary projected recreational landings for 2010 (18.900 M lb; section 4.3 of the EA). As indicated in section 7.1.4 of the EA, there is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the Council-adjusted recreational harvest limit for 2010 and recreational landings in recent years, it is possible that the proposed recreational harvest limit under this alternative may cause some slight decrease in recreational satisfaction if, following subsequent recreational harvest projections, the recreational harvest limit is adjusted below status quo (18.900 M lb) recreation landings. This would result in an overall mixed (positive for the commercial fishery and negative for the recreational fishery) socioeconomic impact.

The cost of any premature closure of the fishery (pounds of bluefish allocated for set-aside) would be shared among the non-RSA participants in the fishery. In addition, it is possible that the vessels that will be used by researchers will not be vessels that have traditionally fished for bluefish. As such, permit holders that land these species during a period where the quota has been reached and the fishery closed could be disadvantaged. However, given that the proposed Council-adjusted commercial quota under Alternative 1 (Preferred TAL alternative) is 4 percent higher than the commercial quota implemented in 2009 and about 38 percent higher

than the 2008 commercial landings, it is not expected that the extent of RSA activity under this alternative would result in significant overall impacts of research trips and compensation trips are expected to be negligible.

It is important to stress that the RSA amount used to evaluate the alternatives presented in this document is the maximum RSA allowed (3 percent of the TAL) to support collaborative research projects among the public, research institutions, and NMFS. The actual RSA for fishing year 2010 will depend on the specific amounts requested by the approved research projects. NMFS will adjust quotas based on updated information on RSA, overages and/or transfers as part of the final rule that implements the 2010 specifications when the data are more complete.

The impacts of the RSAs for other species are addressed in their respective species specifications packages, e.g., summer flounder, scup, and black sea bass in the 2010 specifications package for those species.

## **7.5 Cumulative Impacts of Preferred Alternative on Identified VECs**

The biological and socioeconomic impacts of the preferred alternative for 2010 are expected to be minimal since they are expected to meet the target fishing mortality rate and do not reduce opportunities to participate in the fishery. The preferred alternative (Alternative 1) is considered to be the most reasonable to achieve the fishery conservation objectives while minimizing the impacts on fishing communities as per the objectives of the FMP. A summary of the environmental consequences for each of the alternatives considered is given in Box ES-1 (see Executive Summary).

### **7.5.1 Introduction; Definition of Cumulative Effects**

A cumulative impact analysis is required by the Council on Environmental Quality's (CEQ) regulation for implementation of the National Environmental Policy Act (NEPA). Cumulative effects are defined under NEPA as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action (40 CFR Section 1508.7)." A formal cumulative impact assessment is not necessarily required as part of an Environmental Assessment under NEPA as long as the significance of cumulative impacts has been considered (EPA 1999). The following discussion addresses the significance of the expected cumulative impacts as they relate to the federally-managed bluefish fisheries.

#### *Past, Present, and Reasonably Foreseeable Future Fishing Actions*

The cumulative impacts of past, present and future Federal fishery management actions (including the specification recommendations proposed in this document) should generally be

positive. Although past fishery management actions to conserve and protect fisheries resources and habitats may have been more timely, the mandates of the MSFCMA as currently amended by the SFA require the management actions be taken only after consideration of impacts to the biological, physical, economic, and social dimensions of the human environment. It is therefore expected that under the current management regime, the totality of Federal fisheries management impacts to the environment will, in general, contribute toward improving the human environment.

Past actions under this FMP are described in section 4.1, “History of Development of the Plan” in the FMP and section 1.1.1, “History of FMP Development” in Amendment 1. Overall, actions implemented by the FMP were to address the management objectives described in section 1.1.3 of Amendment 1. Amendment 1 implemented the current annual specifications process to set commercial quotas and recreational harvest limits. In addition, Amendment 1 addressed the new requirements of the SFA, including the new revised National Standards, such as the bluefish overfishing definition (National Standard 1), the effects on fishing communities (National Standard 8), bycatch reduction (National Standard 9), safety at sea (National Standard 10), and identification of EFH for bluefish. Finally, Amendment 1 added a framework adjustment procedure that allowed the Council to add or modify management measures through a streamlined public review process. The bluefish fisheries throughout the management unit are managed primarily via an annual commercial quota and an RHL to control fishing mortality. The specification process allows for the review and modifications to the commercial quota, recreational harvest limit, and other management measures on an annual basis. Assessment of the commercial bluefish quota indicates that overall commercial landings have been below the quota specifications for the last decade. In addition, since the establishment of the bluefish recreational harvest limit in 2000, recreational landings for the most part have been lower than the recreational harvest limits established for those years. However, in 2006 and 2007 the recreational landings exceeded the recreational harvest limit by less than 1 percent and 11 percent, respectively. From 2000 through 2008, combined commercial and recreational landings were below (27 percent) the overall combined TAL implemented during that time period. In 2008, 88 percent of the available TAL was taken by commercial and recreational fishermen with no overages in either sector.

The purpose of this specifications package is to examine the impacts to the environment that would result from the implementation of the 2010 management measures for the bluefish fisheries. These measures include commercial quota and recreational harvest limits and other measures that allow the target exploitation rate to be achieved on an annual basis so the FMP remains in compliance with the MSFCMA as amended by the SFA.

By continuing to meet the national standards and other requirements of the SFA through future FMP amendments and actions under the annual specification process, the expectation is that the management objectives will be met and the expected benefits will not be compromised. In addition, the framework adjustment procedure added in Amendment 1 allows the Council to add or modify management measures through a streamlined public review process. As such,

the Council will ensure that cumulative impacts of these actions will remain positive, both for the ports and communities that depend on these fisheries and the Nation through a sustainable bluefish fishery. Additionally, the action in this EA is not expected to result in significant negative or positive impacts to biological, EFH, or endangered and other protected resources. However, as stated above, the purpose of the specification process in this action and future actions is expected to result in positive impacts on the health of the bluefish stock. As such, cumulative biological impacts to the bluefish stock are expected to be positive. As the stock continues to grow it is possible that CPUE of bluefish would increase, which could result in an overall decrease in fishing effort. If this action in addition to future actions results in a decrease in fishing effort, positive cumulative impacts would result related to non-target species, EFH, and protected resources.

Overall bluefish commercial landings have been below the commercial quotas established for that fishery since the implementation of the coast-wide commercial quota system in 1994. In addition, recreational landings have also been below the recreational harvest limits first established in 2000 with the exception of 2006 and 2007 as indicated above. To compensate for any overharvest and to preserve the conservation intent of the management regime, the FMP under which bluefish is managed includes provisions that require that any commercial landings that exceed the specifications in one year be deducted from the commercial quota that would otherwise have been allowed in the following year. Thus, the FMP and the annual specifications anticipate the possibility that landings may exceed targets in any given year and provide a remedy that at least partially compensates for such occurrences in terms of maintaining the conservation goals of the FMP and the rebuilding programs and thus, mitigating the impacts of those overages. In addition, overages in the recreational fishery would be addressed by way of changes in management measures to reduce the harvest in the following year to the specified level. The annual nature of the management measures is intended to provide the opportunity for the Council and NMFS to assess regularly the status of the fishery and to make necessary adjustments to ensure that there is a reasonable expectation of meeting the objectives of the FMP and the targets associated with any rebuilding programs under the FMP.

During the 1980s, bluefish was consistently one of the top three species most frequently sought by marine recreational fishermen along the Atlantic coast of the United States. In fact, more bluefish (by weight) were landed by anglers coast-wide than any other marine fish each year from 1979 to 1987. An increase in the number of marine anglers, an apparent increase in bluefish abundance, and a decline in the abundance of other desired finfish such as striped bass and weakfish during this time period may explain this predominance. Although most bluefish are harvested by sport fishermen, commercial landings have averaged about 11 M lb per year since 1981, or approximately 23 percent of the total bluefish landings along the Atlantic coast.

In the late 1970s, potential markets for bluefish in Africa and South America stimulated tuna purse seiners to consider harvesting bluefish. This interest prompted concerned fishermen to petition the MAFMC to develop an FMP for this species. Seven fact finding meetings were

held by the Council in early 1979 to give fishermen from Virginia through New England an opportunity to present information on the bluefish fishery. Public attendance at most of these meetings was exceptional. At every meeting, the desire for the development of a Plan was strongly expressed by the recreational community. As a result, in May 1979, the Council held a scoping meeting to develop a work plan for the FMP. The work plan was adopted by the Council in July 1979 and approved by the NMFS in March 1980. Additional impetus to FMP development was provided by the 1982 harvest of bluefish by Florida fishermen using runaround gill nets in Chesapeake Bay (MAFMC 1999).

The Council, in cooperation with the NMFS, New England and South Atlantic Fishery Management Councils, and Commission, completed a Bluefish FMP in 1984. However due to technical issues, the 1984 Council bluefish plan was rejected by the Secretary of Commerce. Although the 1984 Plan was rejected, bluefish remained a major value to the nation and public concerns about bluefish overexploitation were not abated. Subsequently, the fishery management councils and the Commission agreed to proceed jointly on the development of a new bluefish management plan containing compatible management measures that could be enacted in both state and Federal waters. This cooperative venture represented a new approach for managing interjurisdictional fisheries (MAFMC 1999).

The current bluefish management plan was prepared cooperatively by the Council and the ASMFC and was implemented in 1990. The management measures adopted in the FMP included license/permit requirements, recreational possession limits, and a coast-wide commercial quota. Regulations considered include trip limits, area closures or restrictions, and other measures that may be appropriate, including gear prohibitions. The Bluefish FMP Review and Monitoring Committees annually review landing statistics to determine if commercial controls will be implemented.

In 1996, the Council and Commission began development of Amendment 1 to the 1990 Bluefish FMP. Because the Bluefish FMP has a limited number of management options to control fishing mortality, the Council and Commission identified the need to broaden the suite of management measures that could be used to reduce fishing mortality on the bluefish stock. In addition, the amendment was developed to meet the requirements of the SFA that was enacted in October 1996. Specifically, the amendment revised the overfishing definitions (National Standard 1) for bluefish and addressed the new and revised National Standards (National Standard 8 - consider effects on fishing communities; National Standard 9 - reduce bycatch; and National Standard 10 - promote safety at sea) relative to the existing management measures. The amendment also identified essential fish habitat for bluefish. Amendment 1 was partially approved on 29 July 1999.

The cumulative impacts of this FMP were last fully addressed in the Environmental Impact Statement for Amendment 1. The FMP and prior annual management specifications comprise past actions that have produced positive effects on the bluefish fishery. More specifically, the present direct effect of these past actions is the expansion of bluefish stock biomass. Indirect

positive impacts associated with greater availability of the resource have been realized for non-target species, habitat, protected resources, and human communities. These impacts are expanded on in the sections below. The incremental effect of the proposed action in conjunction with other past, present and reasonably foreseeable future actions will continue to directly improve stock conditions and indirectly improve the conditions of the VECs associated with the resource.

Bluefish in the management unit are managed primarily via annual quotas to control fishing mortality. This FMP requires a specifications process which allows for the review and modifications to management measures specified in the FMP on an annual basis. As noted above, the cumulative impact of this FMP and annual specification process has been positive since its implementation after passage of the MSFCMA. Bluefish were overfished prior to management, and the status of this fishery has subsequently improved. The most recent peer-reviewed assessment of bluefish (NEFSC 2005) produced updated fishing mortality and population biomass estimates. According to the most recent assessment update (June 2009), the bluefish stock is not considered overfished:  $B_{2008}$  360.957 M lb (163,727 mt) is greater than the minimum biomass threshold  $\frac{1}{2} B_{MSY} = 162.096$  M lb (73,525.5 mt) and is actually above  $B_{MSY}$  (324.192 M lb or 147,051 mt). The bluefish stock, therefore, appears to be fully rebuilt. The assessment update also concluded that the Atlantic stock of bluefish is not experiencing overfishing; i.e., the most recent  $F$  ( $F_{2008} = 0.12$ ) is less than the maximum  $F$  overfishing threshold specified by SARC-41 ( $F_{MSY} = 0.19$ ). An overview of this information is provided in section 6.1 of this document.

Through development of the FMP and the subsequent annual specification process, the Council continues to manage this resource in accordance with the National Standards required under the MSFCMA. First and foremost the Council has met the obligations of National Standard 1 by adopting and implementing conservation and management measures that have prevented overfishing, while achieving, on a continuing basis, the optimum yield for this species and the United States fishing industry. The Council uses the best scientific information available (National Standard 2) and manages this resource throughout its range (National Standard 3). The management measures do not discriminate among residents of different states (National Standard 4), they do not have economic allocation as the sole purpose (National Standard 5), the measures account for variations in fisheries (National Standard 6), avoid unnecessary duplication (National Standard 7), they take into account the fishing communities (National Standard 8), reduce bycatch (National Standard 9), and promote safety at sea (National Standard 10). Amendment 1 fully addresses how the management measures implemented to successfully manage this species comply with the National Standards. The fishing gear impacts to EFH are discussed in section 6.2.4 of this document.

By continuing to meet the National Standards requirements of the MSFCMA through future FMP Amendments and actions, the Council will insure that cumulative impacts of these actions will remain overwhelmingly positive for the ports and communities that depend on this fishery, the Nation as a whole, and certainly for the resources.

### *Non-Fishing Impacts*

Cumulative effects to the physical and biological dimensions of the environment may also come from non-fishing activities. Non-fishing activities, in this sense, relate to habitat loss from human interaction and alteration or natural disturbances. These activities are widespread and can have localized impacts to habitat such as accretion of sediments from at-sea disposal areas, oil and mineral resource exploration, and significant storm events. In addition to guidelines mandated by the MSFMCA, NMFS reviews these types of effects during the review process required by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for certain activities that are regulated by Federal, state, and local authority. The jurisdiction of these activities is in "waters of the United States" and includes both riverine and marine habitats. A database which could facilitate documentation regarding cumulative impacts of non-fishing activities on the physical and biological habitat covered by the bluefish management unit is not available at this time. The development of a habitat and effect database would accelerate the review process and outline areas of increased disturbance. Inter-agency coordination would also prove beneficial.

It is likely that permitted projects would have negative impacts from disturbance and construction activities immediately around the affected area. Given the wide distribution of the affected species, minor overall negative effects to offshore habitat are anticipated since the affected areas are localized to the project sites, which involve a small percentage of the fish populations and their habitat. Any impacts to inshore water quality from these permitted projects, including impacts to planktonic, juvenile and adult life stages, are unknown but likely minor due to the transient and limited exposure.

### **7.5.2 Summary of Cumulative Effects**

The cumulative effects of the proposed quotas will be examined for the following five areas: targeted species, non-targeted species, habitat, protected species, and communities.

#### **7.5.2.1 Targeted Fishery Resources**

First and foremost with this species, the Council has met the obligations of National Standard 1 by adopting and implementing conservation and management measures that have prevented overfishing, while achieving, on a continuing basis, the optimum yield for this species and the United States fishing industry. Bluefish were overfished prior to management, and the status of this fishery has subsequently improved. As stated above, and in section 6.1, fishing mortality and biomass indicate that the stock is not overfished and overfishing is not occurring.

The Council manages this species in the EEZ. Any non-fishing activities in the EEZ or that have impacts within the geographic range of this fishery could conceivably impact the bluefish population. The Council has commented on the potential negative impacts of non-fishing

projects such as beach replenishment and ocean dumping in the past. Since fishing effort associated with bluefish occurs over wide areas of the North, Mid, and South Atlantic, it is unlikely that the current action adds significantly to the effects of non-fishing activities on the bluefish population.

As stated above, expansion of bluefish biomass is a positive impact resulting from past actions (FMP, annual specifications). The proposed action represents a continuation of this positive outcome, which will incrementally, and in the context of future actions, contribute to continued improvement of stock conditions. Furthermore, reallocation of TAL and RSA will not result in any significant cumulative effects.

#### **7.5.2.2 Non-Target Fish Species or Bycatch**

National Standard 9 addresses bycatch in fisheries. This National Standard requires Councils to consider the bycatch effects of existing and planned conservation and management measures. Bycatch can, in two ways, impede efforts to protect marine ecosystems, efforts to achieve sustainable fisheries, and the full benefits sustainable fisheries can provide to the Nation. First, bycatch can increase substantially the uncertainty concerning total fishing-related mortality, which makes it more difficult to assess the status of stocks, to set the appropriate optimal yield (OY) and define overfishing levels, and to ensure that OYs are attained and overfishing levels are not exceeded. Second, bycatch may also preclude other more productive uses of fishery resources.

The term "bycatch" means fish that are harvested in a fishery, but that are not sold or kept for personal use. Bycatch includes the discard of whole fish at sea or elsewhere, including economic discards and regulatory discards, and fishing mortality due to an encounter with fishing gear that does not result in capture of fish (i.e., unobserved fishing mortality). Bycatch does not include any fish that legally are retained in a fishery and kept for personal, tribal, or cultural use, or that enter commerce through sale, barter, or trade. Bycatch does not include fish released alive under a recreational catch-and-release fishery management program. A catch-and-release fishery management program is one in which the retention of a particular species is prohibited. In such a program, those fish released alive would not be considered bycatch.

Bluefish is primarily a recreational fishery caught by hook and line. The commercial fishery for bluefish is primarily prosecuted with gillnets, otter trawls, and handlines. This fishery often harvests mixed species, including bonito, Atlantic croaker, weakfish, spiny dogfish, and other species. Given the mixed species nature of the bluefish fishery, incidental catch of other species does occur. The bluefish fisheries are managed principally through the specification of annual commercial quotas and recreational harvest levels. The past activities of the bluefish fishery have not greatly impacted non-target species. In addition, the proposed action will not impact non-target species.



The nature of the data makes it difficult to develop any definitive or reliable conclusions about discards for the bluefish fisheries, especially during the periods or in areas where sea sampling has not occurred. As such, it is difficult for the Council and Commission to modify or add management measures to further minimize discards if the data are not available to define the nature and scope of the discard problem or the data indicate that a discard problem does not exist.

The Council recognizes the need for improved estimates of discards under this FMP. The Council has requested increased at-sea sampling intensity over a broader temporal and geographical scope than is currently available.

The lack of discard data for bluefish has hampered the ability of the Council and Commission to respond to potential discard problems in the commercial fishery. The collection of additional data by NMFS will allow the Council and Commission to more effectively respond to discard problems by changes in management measures.

The mortality of fish released due to the recreational measures for bluefish is expected to be low. The fish that survive are not defined as bycatch under the SFA. The Council and Commission believe that information and education programs relative to proper catch and release techniques for bluefish and other species caught by recreational fishermen should help to maximize the number of these species released alive. The Council believes that information and education programs relative to proper catch and release techniques for bluefish and other species caught by recreational fishermen should help to maximize the number of fish species released alive.

Current recreational management measures could affect the discards of bluefish (possession limits). The effects of the possession limit would be greatest at small limits and be progressively less at higher limits. Minimum size limits, bag limits and seasons have proven to be effective management tools in controlling fishing mortality in the recreational fishery. A notable example is the recent success in the management of the Atlantic coast striped bass fishery. The recreational striped bass fishery is managed principally through the use of minimum size limits, bag limits and seasons. When these measures were first implemented, release rates in the recreational striped bass fishery exceeded 90 percent. However, the quick and sustained recovery of the striped bass stock after implementation of these measures provides evidence of their effectiveness in controlling fishing mortality in recreational fisheries.

Any non-fishing activities that have impacts within the geographic range of this fishery could conceivably affect non-target species associated with this fishery (i.e., those identified in section 6.2.1 of the EA) at least at the local level. The Council has commented on the potential negative impacts of non-fishing projects such as beach replenishment and ocean dumping in the past. Since fishing effort associated with bluefish occurs over wide areas of the North,

Mid, and South Atlantic, it is unlikely that the current action adds significantly to the effects of non-fishing activities on non-target species.

The Council and Commission can currently implement annual changes in commercial and recreational management measures in response to changes in fishermen behavior or an increased level of discards through the annual specifications process. The commercial quota under the preferred alternative in 2010 would not result in an increase of effort in the bluefish commercial fishery and thus, the cumulative impact on incidental catch rates of other species in 2010 relative to 2009 would be insignificant.

### **7.5.2.3 Habitat**

It was concluded in the 2004 Annual Specifications EA that impacts of the bluefish fishery on EFH are minimal and temporary in nature. There have been no significant changes in the fishery since then to cause that conclusion to change. Catch quotas specified for the recreational and commercial fisheries since 2004 have not required mitigation to compensate for the adverse effects of fishing on benthic habitats. Among the gears used for the commercial fishery, impacts to benthic EFH are highest for bottom trawls, lowest for hook and line, and intermediate for bottom gillnets. The preferred alternative would increase the catch quota in the commercial bluefish fishery relative to the status quo by 5 percent. Although the specific consequences for habitat are unknown, it can be assumed that the cumulative effects of an expected increase in trawling would be related to fishing effort. As explained in section 6.4.1 of the EA, because very few bottom trawl trips are directed at bluefish and about 13.5 percent of the bluefish landed in the commercial fishery were caught in bottom trawls in 2008, an increase in the commercial quota is not expected to significantly increase bottom trawling activity.

Any non-fishing activities that have impacts within the geographic range of this fishery could conceivably affect habitat including bluefish EFH at least at the local level. The Council has commented on the potential negative impacts of non-fishing projects such as beach replenishment and ocean dumping in the past. Since fishing effort associated with bluefish occurs over wide areas of the North, Mid, and South Atlantic, it is unlikely that the current action adds significantly to the effects of non-fishing activities on habitat. Since it has been concluded that the baseline impacts of the bluefish fishery on EFH are minimal and temporary, continuation of the bluefish TAL will not result in any significant cumulative effects in addition to those of the baseline.

### **7.5.2.4 Protected Species**

Commercial capture of bluefish occurs predominately with gillnets and bottom otter trawls. Bottom otter trawls used to harvest bluefish have not been implicated in marine mammal or turtle mortalities. Prior to 2001, the North Carolina inshore gillnet fishery, which harvests bluefish, was not known to interact with marine mammals; however, available data

demonstrated that the gillnet gear incidentally injured and killed approximately 12 Atlantic bottlenose dolphin (WNA stock) during 1995-2000. Therefore, beginning in 2001, observer coverage of this gillnet fishery was increased. Additionally, NMFS has developed a take reduction plan to reduce injuries and deaths to Atlantic bottlenose dolphins caused by fishing gear in Federal waters of the Mid- and South Atlantic. A team was convened in November of 2001 under authority of the MMPA to formulate a Bottlenose Dolphin Take Reduction Plan (BDTRP). The resulting BDTRP, implemented April 26, 2006 (71 CFR 24776), includes the regulatory management measures summarized in Box 6.3.3 in section 6.3 of the EA for small, medium, and large mesh gillnets, which are organized by bottlenose dolphin management unit, specific location, as well as non-regulatory conservation measures. These past actions are expected to have already reduced adverse impacts of gillnet fisheries on bottlenose dolphins, although the magnitude of the reduction is not known.

Although bottom otter trawls are known to capture and kill (as a result of capture) sea turtles, no record exists of turtle capture or death as a result of bluefish fishing with this gear (e.g., Murray 2006). There are documented encounters of leatherback turtle takes in drift gillnet gear used in the harvest of bluefish, but no mortalities have been confirmed (section 6.4 of the EA). In 2003, NMFS developed the Strategy for Sea Turtle Conservation and Recovery in Relation to Atlantic and Gulf of Mexico Fisheries to evaluate and address domestic sea turtle bycatch comprehensively across jurisdictional (i.e., state and Federal) and fishing sector (i.e., commercial and recreational) boundaries on a per-gear basis in fisheries of the Atlantic and Gulf of Mexico. NMFS implements measures to reduce sea turtle interactions in fisheries by regulations and permits under the ESA and MSFCMA-Stevens Fishery Conservation and Management Act. Since the early 1990s, NMFS has implemented sea turtle conservation measures including, but not limited to, TEDs in trawl fisheries, large circle hooks in longline fisheries, time and area closures for gillnets, and modifications to pound net leaders.

Any non-fishing activities that have impacts within the geographic range of this fishery could conceivably affect protected resources within the range of this fishery (i.e., those identified in section 6.3 of the EA). The Council has commented on the potential negative impacts of non-fishing projects such as beach replenishment and ocean dumping in the past. Since fishing effort associated with bluefish occurs over wide areas of the North, Mid, and South Atlantic, it is unlikely that the current action adds significantly to the effects of non-fishing activities to protected resources.

All of these conservation measures will extend into the future such that the incremental impacts of the proposed management measures will not have any significant cumulative effect on marine mammals, sea turtles or other protected resources.

#### **7.5.2.5 Human Communities**

National Standard 8 requires that management measures take into account the fishing communities. The ports and communities that are dependent on bluefish are fully described in

the 2002 Bluefish Specification Document (section 4.3; MAFMC 2001). To examine recent landings patterns among ports, 2008 NMFS dealer data are used. The top commercial landings ports of bluefish are discussed in section 6.4 of the EA.

The Council-adjusted commercial quota allocation under the preferred alternative would provide commercial fishermen with slight increased fishing opportunities in 2010 compared to 2009. Stable or increased landings from one year to the next are desirable from both a management perspective and an industry perspective. Drastic reductions in the quota from one year to the next could lead to increased levels of noncompliance by both commercial and recreational fishermen. A stable landings pattern would allow fishermen, processors, party/charter boat operators, equipment and bait suppliers to make business decisions.

With regard to the specific quota and recreational harvest limit recommendations proposed in this document, impact to the affected biological, physical, and human components of the environment are described in section 7.0 of this document. Given that no negative impacts are anticipated to result from the preferred alternative (possible negative impacts on habitat would be minimal and temporary), the synergistic interaction of improvements in the efficiency of the fisheries are expected to generate positive impacts overall. These impacts will be felt most strongly in the social and economic dimension of the environment. Direct economic and social benefit from improved fishery efficiency is most likely to affect participants in the bluefish fisheries. These benefits are addressed under the socioeconomic impacts discussion in section 7.4 (preferred alternative) of the EA.

Any non-fishing activities that have impacts within the geographic range of this fishery could conceivably affect, albeit indirectly, affect human communities both directly and indirectly connected to this fishery. The Council has commented on the potential negative impacts of non-fishing projects such as beach replenishment and ocean dumping in the past. Since fishing effort associated with bluefish occurs over wide areas of the North, Mid, and South Atlantic, it is unlikely that the current action adds significantly to the effects of non-fishing activities to human communities.

The proposed actions, together with past and future fishing and non-fishing actions are expected to result in positive cumulative impacts on the biological, physical, and human components of the environment. As long as management continues to prevent overfishing and continue the rebuilding process, the fisheries and their associated communities will continue to prosper over the long-term. In summary, no significant cumulative impacts are expected on the fisheries and their associated communities based on the implementation of the proposed 2010 management measures.

### **7.6.3 Conclusions**

This action builds on actions taken in the original Bluefish FMP, Amendment 1, and the annual specification process for the 2009 fishing year. Based on the information and analyses

presented in these documents and this document, there are no significant cumulative effects associated with the proposed 2010 bluefish specifications.

## **8.0 ESSENTIAL FISH HABITAT ASSESSMENT \***

### **8.1 Description of the Proposed Action**

The proposed action (fully described in section 5.0 of this document) would establish Federal management measures for commercial and recreational bluefish fisheries on the Atlantic Coast of the U.S. for fishing year 2010 (beginning January 1, 2010). In accordance with the bluefish FMP, the purpose of this action is to ensure that overfishing does not occur in FY2010 and that stock recovery can occur such that stock biomass is rebuilt to  $B_{MSY}$  within the rebuilding timeframe established through Amendment 1 (i.e., by 2010). Indeed, the stock appears to be rebuilt (section 6.1.2 of the EA); nevertheless, the proposed action would maintain precautionary management of the resource.

After reviewing the assessment results, the Council's SSC noted that there is sufficient uncertainty in some of the assessment model data inputs. Given this scientific uncertainty, the SSC and monitoring committee recommended setting allowable catch (TAC) for 2010 at a level consistent with the rebuilding fishing mortality rate ( $F = 0.15$ ) rather than increasing  $F$  target to the level specified in the FMP for a recovered stock ( $90\%F_{MSY}$ ;  $F = 0.17$ ). The Council responded in kind and recommended management measures consistent with the more risk-averse target  $F$  (0.15).

### **8.2 Potential Adverse Effects of the Proposed Action on EFH**

An evaluation of the impacts of the proposed action on EFH is provided in section 7.0 of this document. Bluefish are primarily caught recreationally using hook and line. The principal commercial gear used in the directed bluefish fishery is the bottom gillnet. Approximately 13.5 percent of the bluefish landed in 2008 were caught in bottom trawls. The proposed 2010 commercial quota could increase landings of bluefish by as much as 68 percent, but even if there is a significant increase in the catch, it is unlikely that there would be a significant increase in bottom trawling effort or in adverse EFH impacts because bluefish are not generally targeted in the bottom trawl fishery. Estimated commercial landings in 2008 only reached 68 percent of the 2008 commercial quota.

### **8.3 Conclusions**

It was concluded in the 2004 Annual Specifications EA that the baseline impact of the bluefish fishery on EFH is minimal and temporary in nature. Additionally, the specified recreational and commercial catch quotas that have been implemented since then have not required any habitat impact mitigation. Since the proposed action is only expected to have minimal adverse

impacts on EFH , it will continue to minimize the adverse impacts of the recreational and commercial bluefish fisheries on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA.

## **9.0 OTHER APPLICABLE LAWS**

### **9.1 NEPA**

National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of “context” and “intensity.” Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ’s context and intensity criteria. These include:

*1) Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?*

None of the proposed specifications presented in this document are expected to jeopardize the sustainability of bluefish (section 7.0 of the EA). The preferred quota specification for this species is consistent with the FMP objectives. The preferred bluefish TAL of 29.264 M lb for 2010 is expected to achieve the target fishing mortality rate in 2010. The proposed action will aid in the long-term sustainability of harvests from the bluefish stock (section 7.1 of the EA).

*2) Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?*

None of the proposed action’s specifications presented in this document are expected to jeopardize the sustainability of any non-target species. The bluefish fishery is primarily a recreational fishery and prosecuted using hook and line and handlines, and the proposed measures are not expected to alter these fishing methods or activities. None of the specifications are expected to significantly alter fishing methods or activities or are expected to alter the spatial and/or temporal distribution of current fishing effort

*3) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?*

The proposed action as described in section 7.0 of the EA is not expected to cause damage to the ocean, coastal habitats, and/or EFH as defined under the MSFCMA and identified in the FMP. In general, bottom-tending mobile gear, primarily otter trawls, have the potential to

adversely affect EFH for the species detailed in section 6.2 of the EA. However, the bluefish fishery is primarily a recreational fishery which is prosecuted using hook and line gear. In the commercial fishery, bluefish are caught as a targeted species primarily with bottom gill nets and incidentally to other species in bottom trawls. Bottom trawls are known to adversely impact benthic habitats. The proposed increase in the 2010 Council-adjusted commercial quota is near identical (4 percent higher) as the quota implemented in 2009, so fishing effort for bluefish is not expected to increase. Neither these, nor any of the other measures included in the proposed action will have any adverse habitat impact.

*4) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?*

None of the measures alter the manner in which the industry conducts fishing activities for bluefish. Therefore, no changes in fishing behavior that would affect safety are anticipated. The overall effect of the proposed actions on bluefish, including the communities in which they operate, will not impact adversely public health or safety. NMFS will consider comments received concerning safety and public health issues.

*5) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?*

None of the specifications are expected to significantly alter fishing methods or activities or are expected to alter the spatial and/or temporal distribution of current fishing effort (section 7.0 of the EA). Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the fishery. It has been determined that fishing activities conducted under this action will have no adverse impacts on endangered or threatened species, marine mammals, or their critical habitat (section 9.3 below).

*6) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?*

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area. This action merely revises the proposed annual commercial quota, recreational harvest limit, and RSA for the 2010 bluefish fishery. None of the specifications are expected to alter fishing methods or activities. None of the proposed specifications are expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort.

*7) Are significant social or economic impacts interrelated with natural or physical environmental effects?*

The proposed action is not expected to have a significant social or economic impact, nor are the potential socio-economic impacts interrelated with natural or physical effects. None of the specifications are expected to significantly alter fishing methods or activities or are expected to alter the spatial and/or temporal distribution of current fishing effort (section 7.0 of the EA). Therefore, there are no social or economic impacts interrelated with significant natural or physical environmental effects.

*8) Are the effects on the quality of the human environment likely to be highly controversial?*

The impacts of the proposed measures on the human environment are described in section 7.0 of the EA. The proposed action merely revises the proposed annual commercial quota, recreational harvest limit, and RSA for the 2010 bluefish fishery. The proposed action is based on measures contained in the FMP which have been in place for many years. In addition, the scientific information upon which the annual quotas are based has been peer-reviewed and is the most recent information available. The measures contained in this action are not expected to be highly controversial.

*9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?*

This action merely revises the proposed annual commercial quota, recreational harvest limit, and RSA for the 2010 bluefish fishery. The bluefish fishery is not known to be prosecuted in any unique areas such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas. Therefore, the proposed action is not expected to have a substantial impact on any of these areas.

*10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?*

The impacts of the proposed measures on the human environment are described in section 7.0 of the EA. The action merely revises the proposed annual commercial quota, recreational harvest limit, and RSA for the 2010 bluefish fishery. None of the specifications are expected to alter fishing methods or activities or are expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The measures contained in this action are not expected to have highly uncertain, unique, or unknown risks on the human environment.

*11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?*

As discussed in section 7.5 of the EA, the proposed action is not expected to have individually insignificant, but cumulatively significant impacts. The actions, together with past, present,



and future actions are not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment.

*12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?*

The impacts of the proposed measures on the human environment are described in section 7.0 of the EA. The action merely revises the proposed annual commercial quota, recreational harvest limit, and RSA for the 2010 bluefish fishery. The bluefish fishery is not known to be prosecuted in any areas that might affect districts, sites, highways, structures, or objects listed in, or eligible for listing in, the National Register of Historic Places or cause the loss or destruction of significant scientific, cultural or historical resources. Therefore, the proposed action is not expected to affect any of these areas.

*13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?*

This action proposes a commercial quota, recreational harvest limit, and RSA for the 2010 bluefish fishery. There is no evidence or indication that this fishery has ever resulted in the introduction or spread of nonindigenous species. None of the specifications are expected to significantly alter fishing methods or activities or are expected to alter the spatial and/or temporal distribution of current fishing effort. Therefore, it is highly unlikely that the proposed specifications would result in the introduction or spread of a non-indigenous species.

*14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?*

This proposed action merely revises the proposed annual commercial quota, recreational harvest limit, and RSA for the 2010 bluefish fishery. None of the proposed specifications are expected to increase fishing effort or alter the spatial and/or temporal distribution of current fishing effort. In addition, these specifications are consistent with the bluefish FMP. None of these specifications result in significant effects nor do they represent a decision in principle about a future consideration.

*15) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?*

This proposed action merely revises the proposed annual commercial quota, recreational harvest limit, and RSA for the 2010 bluefish fishery. None of the specifications are expected to alter fishing methods or activities such that they threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment. In fact, the proposed

measures have been found to be consistent with other applicable laws (sections 9.2 through 9.8 below).

*16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?*

The impacts of the preferred alternatives on the biological, physical, and human components of the environment are described in section 7.0 of the EA. The cumulative effects of the proposed action on target and non-target species are detailed in section 7.5 of the EA. None of the proposed specifications are expected to increase fishing effort or alter the spatial and/or temporal distribution of current fishing effort. The synergistic interaction of improvements in the efficiency of the fishery through implementation of annual quotas based on the overfishing definitions contained in the FMP are expected to generate positive impacts overall, but the implementation of the proposed 2010 management measures are not expected to result in any cumulative adverse effects that would have a substantial effect on target or non-target species.

## DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for the 2010 Bluefish Specifications, it is hereby determined that the 2010 bluefish fishery specifications will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

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Regional Administrator, Northeast Region, NMFS

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Date

### **9.2 Endangered Species Act**

Sections 6.3 and 7.0 of the EA should be referenced for an assessment of the impacts of the proposed action on endangered or threatened species. Regarding the impacts of the RSA project, it is being approved through a different action (NEAMAP proposal to NOAA Grants Office). As such, that would be the action under which the ESA consultation would be performed. None of the specifications proposed in this document are expected to alter fishing methods or activities. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the fisheries.

### **9.3 Marine Mammal Protection Act**

The Council has reviewed the impacts of the 2010 Bluefish Specifications on marine mammals and concluded that the management actions proposed are consistent with the provisions of the MMPA and would not alter existing measures to protect the species likely to inhabit the management units of the subject fisheries. None of the specifications proposed in this document are expected to alter fishing methods or activities. For further information on the potential impacts of the fishery and the proposed management action, see sections 6.3 and 7.0 of the EA.

### **9.4 Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals. The Council has developed this specifications document and will submit it to

NMFS; NMFS must determine whether this action is consistent to the maximum extent practicable with the CZM programs for each state (Maine through Florida).

## **9.5 Administrative Procedure Act**

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by Federal agencies. The purpose is to ensure public access to the Federal rulemaking process and to give the public notice and opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of an FMP and subsequent amendments and framework adjustments. Development of this specifications document provided many opportunities for public review, input, and access to the rulemaking process. This action and the proposed specifications document was developed through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during the SSC meeting held on July 16, 2009, the Bluefish Monitoring Committee Meetings held on July 17, 2009, held in Philadelphia, Pennsylvania, and during the MAFMC meeting held on August 4-6, 2009 in Alexandria, Virginia. In addition, the public will have further opportunity to comment on this specifications document once NMFS publishes a request for comments notice in the Federal Register (FR).

## **9.6 Section 515 (Information Quality Act)**

### ***Utility of Information Product***

Explain how the information product meets the standards for utility:

Is the information helpful, beneficial or serviceable to the intended user?

The proposed document includes: A description of the 2010 Specifications, the proposed changes to the implementing regulations of the FMP, a description of the alternatives considered, and the reasons for selecting the proposed management measures. This proposed specifications document implements the FMP's conservation and management goals consistent with the MSFCMA as well as all other existing applicable laws.

Is the data or information product an improvement over previously available information? Is it more current or detailed? Is it more useful or accessible to the public? Has it been improved based on comments from or interactions with customers?

This proposed specifications document was developed as a result of a multi-stage process that involved review of the source document (2010 Specifications package) by affected members of the public. The public had the opportunity to review and comment on management measures

during the SSC meeting held on July 16, 2009, the Bluefish Monitoring Committee Meetings held on July 17, 2009, held in Philadelphia, Pennsylvania, and during the MAFMC meeting held on August 4-6, 2009 in Alexandria, Virginia. In addition, the public will have further opportunity to comment on this specifications package once NMFS publishes a request for comments notice on the FR.

What media are used in the dissemination of the information? Printed publications? CD-ROM? Internet? Is the product made available in a standard data format? Does it use consistent attribute naming and unit conventions to ensure that the information is accessible to a broad range of users with a variety of operating systems and data needs?

The FR notice that announces the proposed rule and the implementing regulations will be made available in printed publication and on the website for the Northeast Regional Office. The notice provides metric conversions for all measurements.

### ***Integrity of Information Product***

Explain how the information product meets the standards for integrity:

All electronic information disseminated by National Oceanic and Atmospheric Administration (NOAA) adheres to the standards set out in Appendix III, "Security of Automated Information Resources," OMB Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

If information is confidential, it is safeguarded pursuant to the Privacy Act and Titles 13, 15, and 22 of the U.S. Code (confidentiality of census, business and financial information).

Other/Discussion (e.g., Confidentiality of Statistics of the MSFCMA; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR 229.11, Confidentiality of information collected under the MMPA).

### ***Objectivity of Information Product***

Indicate which of the following categories of information products apply for this product:

- Original Data
- Synthesized Products
- Interpreted Products
- Hydrometeorological, Hazardous Chemical Spill, and Space Weather Warnings, Forecasts, and Advisories
- Experimental Products
- Natural Resource Plans
- Corporate and General Information

Describe how this information product meets the applicable objectivity standards. (See the IQA Documentation and Pre-Dissemination Review Guidelines for assistance and attach the appropriate completed documentation to this form).

What published standard(s) governs the creation of the Natural Resource Plan? Does the Plan adhere to the published standards? (See the NOAA Sec. 515 Information Quality Guidelines, Section II(F) for links to the published standards for the Plans disseminated by NOAA).

In preparing specifications documents, the Council must comply with the requirements of the MSFCMA, the National Environmental Policy Act, the Regulatory Flexibility Act, the Administrative Procedure Act, the Paperwork Reduction Act, the Coastal Zone Management Act, the Endangered Species Act, the Marine Mammal Protection Act, the Information Quality Act, and Executive Orders 12630 (Property Rights), 12866 (Regulatory Planning), 13132 (Federalism), and 13158 (Marine Protected Areas).

Was the Plan developed using the best information available? Please explain.

This specification's document has been developed to comply with all applicable National Standards, including National Standard 2. National Standard 2 states that the FMP's conservation and management measures shall be based upon the best scientific information available. Despite current data limitations, the conservation and management measures proposed to be implemented under this specifications document are based upon the best scientific information available. This information includes NMFS dealer weighout, VTR, and permit data and South Atlantic General Canvass Data for 2008 which were used to characterize the economic impacts of the management proposals and describe the bluefish fisheries. The specialists who worked with these data are familiar with the most recent analytical techniques and with the available data and information relevant to the bluefish fisheries. In addition, Marine Recreational Fisheries Statistics Survey data were used to further characterize the recreational fishery for this species.

Have clear distinctions been drawn between policy choices and the supporting science upon which they are based? Have all supporting materials, information, data and analyses used within the Plan been properly referenced to ensure transparency?

The policy choices (i.e., management measures) proposed to be implemented by this specifications document are supported by the available scientific information and, in cases where information was unavailable, proxy reference points are based on observed trends in survey data. The management measures contained in the specifications document are designed to meet the conservation goals and objectives of the FMP, and prevent overfishing and rebuild overfished resources, while maintaining sustainable levels of fishing effort to ensure a minimal impact on fishing communities.

The supporting materials and analyses used to develop the measures in the proposed management measures are contained in the specifications document and to some degree in previous specifications and/or the FMP as specified in this document.

Describe the review process of the Plan by technically qualified individuals to ensure that the Plan is valid, complete, unbiased, objective and relevant. For example, internal review by staff not involved in the development of the Plan to formal, independent, external peer review. The level of review should be commensurate with the importance of the Plan and the constraints imposed by legally enforceable deadlines.

The review process for this specifications package involves the MAFMC, the Northeast Fisheries Science Center, the Northeast Regional Office, and NOAA Fisheries headquarters. The Center's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, coastal migratory resources, population biology, and the social sciences. The Council review process involves public meetings at which affected stakeholders have opportunity to provide comments on the specifications document. Review by staff at the Regional Office is conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. Final approval of the specifications document and clearance of the rule is conducted by staff at NOAA Fisheries Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

## **9.7 Paperwork Reduction Act**

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the Federal paperwork burden for individuals, small business, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the PRA.

## **9.8 Environmental Justice/EO 12898**

This EO provides that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” EO 12898 directs each Federal agency to analyze the environmental effects, including human health, economic, and social effects of Federal actions on minority populations, low-income populations, and Indian tribes, when such analysis is required by NEPA. Agencies are further directed to “identify potential effects and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices.”

The proposed actions are not expected to affect participation in the bluefish fisheries. Since the proposed action represents no changes relative to the current levels of participation in these fisheries, no negative economic or social effects in the context of EO 12898 are anticipated as a result. Therefore, the proposed action is not expected to cause disproportionately high and adverse human health, environmental or economic effects on minority populations, low-income populations, or Indian tribes.

## **9.9 Impacts of the Plan Relative to Federalism/EO 13132**

This specifications package does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132. The affected states have been closely involved in the development of the proposed management measures through their representation on the Council (all affected states are represented as voting members of at least one Regional Fishery Management Council). No comments were received from any state officials relative to any federalism implications that may be associated with this action.

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## 10.0 LITERATURE CITED

- Balazs, G.H. 1985. Impact of ocean debris on marine turtles: entanglement and ingestion. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-54:387-429.
- Beanlands, G.E., and P. N. Duinker. 1984. Ecological framework adjustment for environmental impact assessment. *Journal of Environmental Management* 8:3.
- Blaylock, R.A., J.W. Hain, L.J. Hansen, D.L. Palka, and G.T. Waring. 1995. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments. NOAA Tech. Memo. NMFS-SEFSC-363. U.S. Department of Commerce, Washington, D.C. 211 pp.
- Brown, S. 2009. Personal Communication. Fla. Fish and Wildlife Conservation Commission. St. Petersburg, Fla.
- EPA 1999. Consideration of Cumulative Impacts in EPA Review of NEPA Documents. U.S. Environmental Protection Agency, Office of Federal Activities. EPA 315-R-99-002.
- Ernst, C.H. and R.W. Barbour. 1972. *Turtles of the United States*. Univ. Press of Kentucky, Lexington. 347 pp.
- Fahay, M. 1998. Essential Fish Habitat Document: Materials for determining habitat requirements of bluefish, *Pomatomus saltatrix* (Linnaeus). NMFS, Northeast Fisheries Science Center.
- Gentner, B. and S. Steinback 2008. The economic contribution of marine angler expenditures in the United states, 2006. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-F/SPO-94. 301 pp.
- Hicks, R., S. Steinback, A. Gautam, and E. Thunberg. 1999. Volume II. The economic value of New England and Mid-Atlantic sportfishing in 1994. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-F/SPO. 45 pp.
- James, M.C., C.A. Ottensmeyer, and R.A. Myers. 2005. Identification of high-use habitat and threats to leatherback sea turtles in northern waters: new directions for conservation. *Ecol. Lett.* 8: 195-201.
- Jury, S.H., J.D. Field, S.L. Stone, D.M. Nelson and M.E. Monaco. 1994. Distribution and abundance of fishes and invertebrates in North Atlantic Estuaries. ELMR Rep. No. 13. NOAA/NOS Strategic Environmental Assessment Div., Silver Spring, MD. 221pp.
- Laney, R.W. 1997. The relationship of submerged aquatic vegetation (SAV) ecological value to species managed by the Atlantic States Marine Fisheries Commission (ASMFC): summary

for the ASMFC SAV Subcommittee. pp. 11-35 in C.D. Stephan and T.E. Bigford, eds. Atlantic Coastal Submerged Aquatic Vegetation: a review of its ecological role, anthropogenic impacts, state regulation, and value to Atlantic coastal fish stocks. Atlantic States Marine Fisheries Commission, Washington, D.C. Habitat Management Series #1.

Leatherback TEWG. 2007. An assessment of the leatherback turtle population in the Atlantic Ocean. NOAA Technical Memorandum NMFS-SEFSC-555, 116 pp.

McInerny, S. 2009. Personal Communication. NC Division of Marine Fisheries. Morehead City, NC.

MAFMC. 2003. 2004 Atlantic bluefish specifications. Dover, DE. 79 pp.

\_\_\_\_\_. 2001. 2002 Atlantic bluefish specifications. Dover, DE. 114 pp.

\_\_\_\_\_. 1999. Amendment 1 to the bluefish fishery management plan. Dover, DE. 341 pp. + append.

\_\_\_\_\_. 1990. Fishery management plan for the bluefish fishery. Dover, DE. 81 pp. + append.

Murphy, T.M., S.R. Murphy, D.B. Griffin, and C. P. Hope. 2006. Recent occurrence, spatial distribution and temporal variability of leatherback turtles (*Dermochelys coriacea*) in nearshore waters of South Carolina, USA. Chel. Cons. Biol. 5(2): 216-224.

Murray, K.T. 2006. Estimated average annual bycatch of loggerhead sea turtles (*Caretta caretta*) in U.S. Mid-Atlantic bottom otter trawl gear, 1996-2004. US Dep. Commer., Northeast Fish. Sci. Cent. Ref. Doc. 06-19; 26 p.

Nelson, D.M., E.A. Irlandi, L.R. Settle, M.E. Monaco, and L. Coston-Clements. 1991. Distribution and Abundance of Fishes and Invertebrates in Southeast Estuaries. ELMR Rep. No. 9. NOAA/NOS Strategic Environmental Assessments Division, Silver Spring, MD. 167 p.

NMFS. 2007. Guidelines for economic review of National Marine Fisheries Service regulatory sections. Office of Sustainable Fisheries, National Marine Fisheries Service. Silver Spring, Maryland 20910. Revised March 20, 2007.

NEFSC. 2005. 41st Northeast Regional Stock Assessment Workshop (41st SAW). 41st SAW assessment report. U.S. Dep. Commer., Northeast Fish Sci Cent Ref Doc. 05-14; 237 p.

NMFS and USFWS. 1992. Recovery plan for leatherback turtles in the U.S. Caribbean, Atlantic, and Gulf of Mexico. National Marine Fisheries Service, Washington, D.C. 65 pp.

\_\_\_\_\_. 1995. Status reviews for sea turtles listed under the Endangered Species Act of 1973. National Marine Fisheries Service, Silver Spring, Maryland. 139 pp.

\_\_\_\_\_. 2007. Leatherback sea turtle (*Dermochelys coriacea*) 5 year review: summary and evaluation. National Marine Fisheries Service, Silver Spring, Maryland. 79 pp.

Palka, D. 2000. Abundance and distribution of sea turtles estimated from data collected during cetacean surveys. In: Bjorndal, K.A. and AR Bolten. Proceedings of a workshop on assessing abundance and trends for in-water sea turtle populations. U.S. Dep. Commer. NOAA Tech. Mem. NMFS-SEFSC-445, 83pp.

Palka, D.L. and Rossman, M.C. 2001. Bycatch estimates of coastal bottlenose dolphin (*Tursiops truncatus*) in U.S. Mid-Atlantic gillnet fisheries for 1996 to 2000. Northeast Fish. Sci. Cent. Ref. Doc. 01-15; 77 p.

Pritchard, P.C.H. 1982. Nesting of the leatherback turtle, *Dermochelys coriacea*, in Pacific, Mexico, with a new estimate of the world population status. Copeia 1982:741-747.

Rebel, T.P. 1974. Sea turtles and the turtle industry of the West Indies, Florida and the Gulf of Mexico. Univ. Miami Press, Coral Gables, Florida.

Shoop, C.R. and R.D. Kenney. 1992. Seasonal distributions and abundance of loggerhead and leatherback sea turtles in waters of the northeastern United States. Herpetol. Monogr. 6: 43-67.

Spotila, J.R., A.E. Dunham, A.J. Leslie, A.C. Steyermark, P.T. Plotkin, and F.V. Paladino. 1996. Worldwide Population Decline of *Demochelys coriacea*: Are Leatherback Turtles Going Extinct? Chelonian Conservation and Biology 2(2): 209-222.

Steinback, S. 2008. Personal communication. NMFS/NEFSC. Woods Hole, MA.

Steinback, S., E. Thunberg, J. O'Neil, A. Gautam, M. Osborn. 1999. Volume I: Summary report of methods and descriptive statistics for the 1994 Northeast Region marine economics survey. NOAA Technical Memorandum, NMFS-F/SPO-37, August 1999. USDC, NOAA, NMFS, 124 pp.

Stevenson D, Chiarella L, Stephan D, Reid R, Wilhelm K, McCarthy J, Pentony M. 2004. Characterization of the fishing practices and marine benthic ecosystems of the northeast US shelf, and an evaluation of the potential effects of fishing on essential habitat. NOAA Tech Memo NMFS NE 181; 179 p.

Stone, S.L., T.A. Lowery, J.D. Field, S.H. Jury, D.M. Nelson, M.E. Monaco, C.D. Williams, and L.A. Andreassen. 1994. Distribution and abundance of fishes and invertebrates in Mid-Atlantic estuaries. ELMR Rep. No. 12. NOAA/NOS SEA Division, Silver Spring, MD. 280 p.

Wade, P. R., and R. P. Angliss. 1997. Guidelines for assessing marine mammal stocks: Report of the GAMMS Workshop, April 3-5, 1996, Seattle, Washington. NOAA Tech Memo NMFS-OPR-12. US DOC, Washington, DC. 93pp.

Waring GT, Josephson E, Fairfield-Walsh CP, Maze-Foley K, editors. 2007. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments -- 2007. NOAA Tech Memo NMFS NE 205; 415 p.

Witt, M.J., A.C. Broderick, DJ. Johns, C. Martin, R. Pemose, M.S. Hoogmoed, and BJ. Godley. 2007. Prey landscapes help identify potential foraging habitats for leatherback turtles in the NE Atlantic. Mar. Ecol. Prog. Ser. 337: 231-243.

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## **11.0 LIST OF PREPARERS OF THE ENVIRONMENTAL ASSESSMENT**

The bluefish specifications were submitted to the NMFS by the MAFMC. This specifications package was prepared by the following members of the MAFMC staff: Dr. José L. Montañez and James L. Armstrong. Scott R. Steinback (NMFS/NEFSC) assisted in describing the economic environment of the recreational fishery.

## **12.0 LIST OF AGENCIES AND PERSONS CONSULTED**

In preparing this specifications document, the Council consulted with the NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils.

To ensure compliance with NMFS formatting requirements, the advice of NMFS Northeast Region personnel, including Tobey Curtis was relied upon during document preparation.

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## **REGULATORY IMPACT REVIEW/INITIAL REGULATORY FLEXIBILITY ANALYSIS (RIR/IRFA)**

### **1.0 INTRODUCTION**

The NMFS requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions that either implement a new FMP or significantly amend an existing plan. This RIR is part of the process of preparing and reviewing FMPs and provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. This analysis also provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problems. The purpose of this analysis is to ensure that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. This RIR addresses many items in the regulatory philosophy and principles of EO 12866. Also included is an Initial Regulatory Flexibility Analysis (IRFA). This analysis is being undertaken in support of the 2010 specifications for bluefish.

### **2.0 EVALUATION OF REGULATORY IMPACT REVIEW (EO 12866) SIGNIFICANCE**

#### **2.1 Description of the Management Objectives**

A complete description of the purpose and need and objectives of this rule is found under section 4.0 of the EA. This action is taken under the authority of the MSFCMA and regulations at 50 CFR part 648.

#### **2.2 Description of the Fishery**

A description of ports and communities is found in the 2002 Bluefish Specifications Document (MAFMC 2001). Additionally, the “top bluefish ports” that landed bluefish in 2008 are identified in section 6.4 of the EA. An analysis of permit data is also found in section 6.4.3 of the EA.

#### **2.3 A Statement of the Problem**

A statement of the problem for resolution is presented under section 4.0 of the EA.

#### **2.4 A Description of Each Alternative**

A full description of the alternatives analyzed in this section and the TAL derivation process is presented in sections 4.3 and 5.0 of the EA. In addition, a brief description of each alternative is presented below for reference purposes.

## 2.5 Analysis of Alternatives

The action does not constitute a significant regulatory action under EO 12866 for the following reasons. First, it will not have an annual effect on the economy of more than \$100 million. The measures considered in this bluefish analysis will not affect total revenues generated by the commercial sector or party/charter sector to the extent that a \$100 million annual economic impact will occur in the bluefish fisheries. Based on NMFS preliminary dealer data (ME-VA) and South Atlantic General Canvass data (NC-FL east coast), the total commercial value in 2008 (Maine through Florida's east coast) was estimated at approximately \$2.6 million for bluefish.

The Council-adjusted commercial bluefish quota for 2010 is higher (i.e., 4 percent) than the adjusted bluefish commercial quota for 2009 and approximately 68 percent above the commercial landings for 2008. This commercial quota would allow fishermen about the same fishing opportunities for bluefish in 2010 compared to the 2009 adjusted quota. The NMFS Quota Report as of the week ending November 11, 2009 indicates that overall bluefish commercial landings are within the overall commercial quota for 2009 (56 percent of the quota landed). Therefore, the 2010 overall quota was not adjusted for overages. Given the potential for fishing opportunities in 2010 when compared to 2009, it is expected that overall ex-vessel revenues from bluefish will remain about the same in 2010 when compared to 2009 as a consequence of the proposed Council-adjusted commercial quota if market conditions remain relatively stable.

According to MRFSS data, the number of recreational fishing trips for all modes combined in the North Atlantic, Mid-Atlantic, and South Atlantic regions in 2008 were 9.2, 20.6, and 22.3 million, respectively. Of the total number of fishing trips for all modes combined in the North Atlantic, Mid-Atlantic, and South-Atlantic regions, approximately 0.47 million (5.1 percent), 0.94 million (4.6 percent), and 0.58 million trips (2.6 percent) were party/charter fishing trips, respectively. It is estimated that the number of party/charter fishing trips that sought bluefish as the primary species from Maine through Virginia (i.e., total effort targeting bluefish by party/charter mode) in 2008 was approximately 82 thousand (Table 8).

Under Alternative 1, the bluefish 2010 Council-adjusted recreational harvest limit would be 18.335 M lb. This limit would be approximately 3 percent below the recreational landings for 2008 (18.900 M lb) and 6 percent below the limit implemented for 2009 (19.528 M lb). The possession limit would remain at 15 fish. Bluefish recreational landings for the 2000 to 2005 period have been substantially lower than the recreational harvest limits established for those years; ranging from 10 percent in 2005 to 59 percent in 2000. For the 2000-2005 period, recreational landings have ranged from 10.606 M lb (2000) to 18.132 M lb (2005), averaging 13.718 M lb or about 41 percent below the average recreational harvest limit implemented for those years combined. However, in 2006 and 2007, recreational landings were 16.752 and 21.163 M lb, respectively, or about 7 percent higher than the combined recreational harvest limit implemented those years. Given recent trends in recreational landings it is expected that

the recreational sector will land close to the adjusted recreational harvest limit for 2010. Estimated recreational landings for 2010 are 18.900 M lb (section 4.3 of the EA). The proposed adjusted recreational harvest limit under this alternative is near identical (less than 3 percent lower) than the projected recreational landings for 2010. It is important to stress that the RSA amount used to evaluate the alternatives presented in this document is the maximum RSA allowed (3 percent of the TAL) to support collaborative research projects among the public, research institutions, and NMFS. The actual RSA for fishing year 2010 will depend on the specific amounts requested by the approved research projects. NMFS will adjust quotas based on updated information on RSA, overages and/or transfers as part of the final rule that implements the 2010 specifications when the data are more complete.

At the present time there are neither behavioral or demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. However, given the level of the Council-adjusted recreational harvest limit for 2010 and recreational landings in recent years, it is possible that given the proposed recreational harvest limits under Alternative 1, the demand for party/charter boat trips may be slightly negatively impacted. Currently, the market demand for this sector is relatively stable. Overall, it is not expected that the final recreational management measures will significantly affect gross revenues of businesses providing goods and services to anglers participating in the party/charter boat, private/rental boat, and shore fisheries for bluefish.

The action is necessary to advance the recovery of the bluefish stock, and to establish the harvest of this species at sustainable levels. The action benefits in a material way the economy, productivity, competition and jobs. The action will not adversely affect, in the long-term, competition, jobs, the environment, public health or safety, or state, local, or tribal government communities. Second, the action will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency. No other agency has indicated that it plans an action that will affect the bluefish fishery in the EEZ. Third, the action will not materially alter the budgetary impact of entitlement, grants, user fees, or loan programs or the rights and obligations of their participants. And, fourth, the action does not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in EO 12866.

The economic effects of the bluefish effort reductions were evaluated through Amendment 1. The economic analysis presented at that time was largely qualitative in nature. Assessment of the bluefish quota indicates that overall landings have been within the quota specifications since the implementation of Amendment 1. Therefore, there is a reasonable expectation that the management objectives will be met and the expected economic benefits will not be compromised.

For each alternative potential impacts on several areas of interest are discussed. The objective of this analysis is to describe clearly and concisely the economic effects of the various alternatives. The types of effects that should be considered include the following changes in



landings, prices, consumer and producer benefits, harvesting costs, enforcement costs, and distributional effects. Due to the lack of an empirical model for this fishery and knowledge of elasticities of supply and demand, a qualitative approach to the economic assessment was adopted. Nevertheless, quantitative measures are provided whenever possible.

A more detailed description of the economic concepts involved can be found in "Guidelines for Economic Review of National Marine Fisheries Service Regulatory Actions" (NMFS 2007), as only a brief summary of key concepts will be presented here.

Benefit-cost analysis is conducted to evaluate the net social benefit arising from changes in consumer and producer surpluses that are expected to occur upon implementation of a regulatory action. Total Consumer Surplus (CS) is the difference between the amounts consumers are willing to pay for products or services and the amounts they actually pay. Thus CS represents net benefits to consumers. When the information necessary to plot the supply and demand curves for a particular commodity is available, consumer surplus is represented by the area that is below the demand curve and above the market clearing price where the two curves intersect. Since an empirical model describing the elasticities of supply and demand for this species is not available, it was assumed that the price for this species was determined by the market clearing price or the interaction of the supply and demand curves. This price was the base price used to determine potential changes in prices due to changes in landings.

Net benefit to producers is producer surplus (PS). Total PS is the difference between the amounts producers actually receive for providing goods and services and the economic cost producers bear to do so. Graphically, it is the area above the supply curve and below the market clearing price where supply and demand intersect. Economic costs are measured by the opportunity cost of all resources including the raw materials, physical and human capital used in the process of supplying these goods and services to consumers.

One of the more visible costs to society of fisheries regulation is that of enforcement. From a budgetary perspective, the cost of enforcement is equivalent to the total public expenditure devoted to enforcement. However, the economic cost of enforcement is measured by the opportunity cost of devoting resources to enforcement vis à vis some other public or private use and/or by the opportunity cost of diverting enforcement resources from one fishery to another.

#### Alternative 1 (Preferred Alternative)

A complete description of the derivation of the TAL and its allocation to the commercial and recreational sectors is presented in sections 4.3 and 5.0 of the EA. Alternative 1 would set the TAL at 29.264 M lb. This alternative includes a Council-adjusted commercial quota of 10.051 M lb (the 2<sup>nd</sup> least restrictive commercial quota), an RHL of 18.335 M lb, and an RSA of 0.878 M lb for 2010.

## Commercial Fishery

For purposes of this analysis, the status quo and all other alternatives will be evaluated under the assumption that the primary measure for achieving the conservation objectives will be through changes in quota levels. This alternative as well as the other alternatives will be evaluated against a base line. The base line condition provides the standard against which all other alternative actions are compared. In this analysis, the base line condition is the bluefish landings for 2008. This comparison will allow for the evaluation of the potential fishing opportunities associated with each alternative in 2010 versus landing that took place in 2008. Aggregate changes in fishing opportunities in 2010 (Council-adjusted commercial quota) versus 2008 landings are shown in Table 35. The information presented in Table 35 was used to determine overall potential changes in commercial landings associated with the quota levels associated with each of the alternatives evaluated in this analysis.

Due to a lack of an empirical model for this fishery and knowledge of elasticities of supply and demand, a qualitative approach to the economic assessment was adopted. Nevertheless, quantitative measures are provided whenever possible.

### *Landings*

Under the preferred alternative, the overall Council-adjusted commercial quota for 2010 would allow for an overall 68 percent increase in landings in 2010 compared to actual landings in 2008 (5.977 M lb). However, in reality, coastwide commercial landings are consistently below the limit established by the quota. For example, on average, commercial landings for the combined 2004 through 2008 period (35.470 M lb) were 21 percent below the combined quota for the period (44.982 M lb). In addition, 2008 commercial landings (5.977 M lb) were 22 percent below the quota for that year (7.692 M lb). There is no indication that the market environment for commercially caught bluefish will substantially change in 2010 compared to 2008 or 2009. As such, it is expected that bluefish commercial landings in 2010 will be similar to those that occurred in 2008 and 2009.

Given that this alternative is expected to result in the same overall landings level as in 2008 and 2009, and that there is no indication that the market environment for commercially caught bluefish will change considerably in year 2010, it would be anticipated that there will be no change in the price for this species holding all other factors constant. Impacts on consumer surplus, harvest costs, producer surplus, enforcement costs, and distributive effects associated with Alternative 1 are not expected to change when compared to 2009.

## Recreational Fishery

Under Alternative 1, the bluefish 2010 Council-adjusted recreational harvest limit would be 18.335 M lb. This limit would be near identical (approximately 3 percent below) the recreational landings for 2008 and projected 2010 landings (18.900 M lb) and 6 percent below

the limit implemented for 2009 (19.528 M lb). The possession limit would remain at 15 fish. There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the Council-adjusted recreational harvest limit for 2010 and recreational landings in recent years, it is possible that the proposed recreational harvest limit under this alternative may cause some slight decrease in recreational satisfaction (i.e., 2010 harvest limit slightly lower than projected 2010 recreational landings). Note: It is possible that future update of recreational landings projections done by the NMFS (when more data is available, e.g., following wave 5 of the MRFSS data) could result in adjustment transfers different from those presented in this specifications package (section 4.3 of the EA).

There is no information regarding how the potential decrease in the recreational harvest limits for this species will affect the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable; however, it is possible that given the proposed recreational harvest limits associated with this alternative, the demand for party/charter boat trips may be negatively impacted. Some anglers may choose to reduce their effort in 2010 as a consequence of the recreational harvest limit and are likely to transfer this effort to alternative species (i.e., spot, weakfish, striped bass, tautog, pelagics, etc.) resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing.

#### Alternative 2 (Presumes Rebuilt Stock)

The same assumptions regarding landings relative to the base line and changes in fishing opportunities discussed under Alternative 1 also apply here. Alternative 2 would set the TAL at 33.263 M lb. This TAL includes a Council-adjusted commercial quota of 10.185 M lb (the least restrictive commercial quota), an RHL of 22.371 M lb, and an RSA of 1.007 M lb for 2010.

#### Commercial Fishery

##### *Landings*

Under this non-preferred alternative, the overall Council-adjusted commercial quota for 2010 would allow for an overall 70 percent increase in landings in 2010 compared to actual landings in 2008 (5.977 M lb). However, in reality, coastwide commercial landings are consistently below the limit established by the quota. For example, on average, commercial landings for the combined 2004 through 2008 period (35.470 M lb) were 21 percent below the combined quota for the period (44.982 M lb). In addition, 2008 commercial landings (5.977 M lb) were 22 percent below the quota for that year (7.692 M lb). There is no indication that the market environment for commercially caught bluefish will substantially change in 2010 compared to

2008 or 2009. As such, it is expected that bluefish commercial landings in 2010 will be similar to those that occurred in 2008 and 2009.

Given that this alternative is expected to result in the same overall landings level as in 2008 and 2009, and that there is no indication that the market environment for commercially caught bluefish will change considerably in year 2010, it would be anticipated that there will be no change in the price for this species holding all other factors constant. Impacts on consumer surplus, harvest costs, producer surplus, enforcement costs, and distributive effects associated with Alternative 2 are not expected to change when compared to 2009.

### Recreational Fishery

Under Alternative 2, the bluefish 2010 adjusted recreational harvest limit would be 22.371 M lb. This limit would be approximately 18 percent above the recreational landings for 2008 and projected 2010 landings (18.900 M lb) and 15 percent above the limit implemented for 2009 (19.528 M lb). The possession limit would remain at 15 fish. There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the Council-adjusted recreational harvest limit for 2010 and recreational landings in recent years, it is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction and is expected to result in landings close to the recreational harvest limit. In addition, the recreational possession limit remains unchanged for 2010. Note: It is possible that future update of recreational landings projections done by the NMFS (when more data is available, e.g., following wave 5 of the MRFSS data) could result in adjustment transfers different from those presented in this specifications package (section 4.3 of the EA).

### Alternative 3 (Status Quo/No Action)

The same assumptions regarding landings relative to the base line and changes in fishing opportunities discussed under Alternative 1 also apply here. Alternative 3 would set the TAL at 29.356 M lb. This TAL includes a Council-adjusted commercial quota of 9.534 M lb (most restrictive commercial quota), an RHL of 18.942 M lb, and an RSA of 0.881 M lb for 2010. Council-adjusted commercial quota and recreational harvest limit associated with the TAL (29.356 M lb) under this alternative are 2 percent and 3 percent lower, respectively, than the commercial quota and recreational harvest limit implemented in 2009. Even though the TAL under Alternative 3 is the status quo measure, the 2010 Council-adjusted bluefish commercial quota and recreational harvest limit are slightly different (lower) than the adjusted quota and recreational harvest limit implemented in 2009 mainly due to differences between the RSA amounts used to adjust the TALs between those two time periods. The Council rejected this alternative because it would yield lower commercial fishing opportunities when compared to preferred Alternative 1.

## *Landings*

Under this non-preferred alternative, the overall Council-adjusted commercial quota for 2010 would allow for an overall 60 percent increase in landings in 2010 compared to actual landings in 2008 (5.977 M lb). However, in reality, coastwide commercial landings are consistently below the limit established by the quota. For example, on average, commercial landings for the combined 2004 through 2008 period (35.470 M lb) were 21 percent below the combined quota for the period (44.982 M lb). In addition, 2008 commercial landings (5.977 M lb) were 22 percent below the quota for that year (7.692 M lb). There is no indication that the market environment for commercially caught bluefish will substantially change in 2010 compared to 2008 or 2009. As such, it is expected that bluefish commercial landings in 2010 will be similar to those that occurred in 2008 and 2009.

Given that this alternative is expected to result in the same overall landings level as in 2008 and 2009, and that there is no indication that the market environment for commercially caught bluefish will change considerably in year 2010, it would be anticipated that there will be no change in the price for this species holding all other factors constant. Impacts on consumer surplus, harvest costs, producer surplus, enforcement costs, and distributive effects associated with Alternative 3 are not expected to change when compared to 2009.

## Recreational Fishery

Under Alternative 3, the bluefish 2010 adjusted recreational harvest limit would be 18.942 M lb. This limit would be near identical (less than 1 percent higher) than the recreational landings for 2008 and projected 2010 landings (18.900 M lb) and 3 percent below the limit implemented for 2009 (19.528 M lb). The possession limit would remain at 15 fish. There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the Council-adjusted recreational harvest limit for 2010 and recreational landings in recent years, it is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction and is expected to result in landings close to the recreational harvest limit. In addition, the recreational possession limit remains unchanged for 2010. Note: It is possible that future update of recreational landings projections done by the NMFS (when more data is available, e.g., following wave 5 of the MRFSS data) could result in adjustment transfers different from those presented in this specifications package (section 4.3 of the EA).

## Description of Impacts of Alternatives

The overall impacts of bluefish landings on prices, consumer surplus, and producer surplus are difficult to determine without detailed knowledge of the relationship between supply and demand factors for this fishery. In the absence of detailed empirical models for this fishery and

knowledge of elasticities of supply and demand, a qualitative approach was employed to assess potential impacts of the management measures.

The impact of each the regulatory alternatives relative to the base year was discussed above. The analysis conducted in this section was based on the evaluation of potential fishing opportunities associated with each quota alternative in 2010 compared to overall landings in 2008.

None of the alternatives evaluated are expected to have are expected to have impacts on prices, consumer surplus, or producer surplus in the commercial sector. While all the three alternatives evaluated are expected to provide higher commercial fishing opportunity in 2010 when compared to 2009, coastwide commercial landings have been consistently below the limit established by the quota. There is no indication that the market environment for commercially caught bluefish will substantially change in 2010 compared to 2008 or 2009. Stable or increased landings from one year to the next are desirable from both a management and industry perspective. Drastic reductions in the quota from one year to the next could lead to increased levels of noncompliance by both commercial and recreational fishermen. A stable landings pattern would allow fishermen, processors, party/charter boat operators, equipment and bait suppliers to make business decisions.

No changes in the competitive nature of these fisheries are expected to occur if any of these management measures were implemented. All the alternatives would maintain the competitive structure of the fishery, that is, there are no changes in the manner the quotas are allocated by region or state from the base year. However, large reductions in quota levels from year to year may affect vessels differently due to their capability to adjust to quota changes.

No changes in enforcement costs or harvest costs have been identified for any of the evaluated alternatives.

Since empirical models describing the elasticities of supply and demand for this species is not available, we cannot determine with certainty the impact of changes in landings on prices, consumer surplus, or producer surplus. Therefore, in order to assess the potential net benefits of each alternative, changes in overall ex-vessel gross revenues associated with each alternative are typically estimated. More specifically, changes in landings for bluefish in 2010 compared to the 2008 base year would be used to assess the potential changes in fishing opportunities between these two time periods. Potential changes in landings (i.e., fishing opportunities) for bluefish would then be multiplied by the overall 2008 ex-vessel price for bluefish to derive potential changes in overall net revenues which are used as a proxy for changes in net benefits. Preliminary NMFS dealer data from Maine through Virginia and South Atlantic General Canvass data were used to derive the ex-vessel price for bluefish from Maine through Florida's east coast. The ex-vessel price for bluefish in 2008 was estimated at \$0.44/lb. However, since the aggregate change in landings in 2010 compared to the base year landings (2008) is expected to be nil under Alternatives 1, 2, and 3, no overall changes in revenues are expected

under these alternatives. The Council selected Alternative 1 as the preferred alternative because it is associated with a more risk-averse F target for 2010 when compared to Alternative 2 (sections 1.0, 4.3, and 5.0 of the EA for additional discussion), while providing the 2<sup>nd</sup> least restrictive commercial quota among all alternatives evaluated.

The discussion regarding changes in gross revenues presented above assumed static prices (i.e., 2008) for bluefish and no significant changes in the market environment for commercially caught bluefish in year 2010. However, if 2010 commercial bluefish landings were to substantially vary from recent years, changes in market prices and revenues different for those presented above are possible.

Given the level of the recreational harvest limit for 2010, recreational landings in recent years, and projected recreational landings for 2010, it is not expected that the recreational harvest limits under Alternatives 2 and 3 will affect the demand for party/charter boat trips. Angler satisfaction is not expected to be affected in a negative manner since the recreational harvest limit for 2010 is not expected to affect the number of bluefish recreational trips. In addition, the recreational possession limit remains unchanged for 2010. It is possible that proposed recreational harvest limit under Alternative 1 may cause some decrease in recreational satisfaction (i.e., 2010 harvest limit slightly lower than projected 2010 recreational landings) which could potentially affect the demand for party/charter boat trips.

It is important to mention that although the measures that are evaluated in this specification package are for the 2010 fisheries, the annual specification process for these fisheries could have potential cumulative impacts. The extent of any cumulative impacts from measures established in previous years is largely dependent on how effective those measures were in meeting their intended objectives and the extent to which mitigating measures compensated for any quota overages. To date, the management measures implemented in the commercial and recreational fisheries have the intended recovery objective of the FMP and in the period from 2000 through 2008 combined commercial and recreational landings were below (27 percent) the overall combined TAL implemented during that time period. However, in 2006 and 2007 the recreational landings exceeded the recreational harvest limit by less than 1 percent and 11 percent, respectively. In 2008, 88 percent of the available TAL was taken by commercial and recreational fishermen with no overages in either sector.

While the overall commercial quota was not taken in 2000-2008, a few states were constrained by the initial quota in those years. As the result of increased landings, those states received transfers of bluefish from other states; however the overall commercial quota was not taken. The NMFS Quota Report as of the week ending November 11, 2009 indicates that overall bluefish commercial landings are within the overall commercial quota for 2009 (56 percent of quota landed).

The most recent stock assessment for bluefish was conducted in June 2005 and was peer-reviewed by the 41<sup>st</sup> SARC (NEFSC 2005). An "age-structured assessment program" (ASAP

model) was used to estimate bluefish fishing mortality and biomass as well as update the biological reference points. According to the assessment, bluefish were not overfished ( $B_{2004} = 104,136$  mt which is greater than the minimum biomass threshold or  $\frac{1}{2} B_{MSY} = 73,526$  mt) and overfishing was not occurring ( $F_{2004} = 0.15$  which is less than the maximum fishing mortality threshold or  $F_{MSY} = 0.19$ ). The most recent stock assessment update (June 2008) resulted in an estimate of bluefish biomass for 2008 that is above  $B_{MSY}$  ( $B_{MSY} = 147,051$  mt;  $B_{2008} = 163,727$  mt). The bluefish stock, therefore, appears to be fully rebuilt. The assessment update also concluded that the Atlantic stock of bluefish is not experiencing overfishing; i.e., the most recent  $F$  ( $F_{2008} = 0.12$ ) is less than the maximum  $F$  overfishing threshold specified by SARC-41 ( $F_{MSY} = 0.19$ ). However, as described in the EA, the Council informed by its SSC and Monitoring Committee interpreted the assessment update with caution. More specifically, the SSC noted that there are various sources of scientific uncertainty associated with the updated stock assessment. For example, the SSC noted that most of the uncertainty relates to the data used to establish the ALK, a central source of information for developing the CAA matrix that the ASAP model attempt to replicate; the SSC also noted that fishery independent data and seine surveys do not sample this pelagic species effectively, so survey indices do not track stock abundance well (section 6.1.2 of the EA).

### **3.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS**

#### **3.1 Introduction and Methods**

The Regulatory Flexibility Act (RFA) requires the Federal rule maker to examine the impacts of proposed and existing rules on small businesses, small organizations, and small governmental jurisdictions. When an agency publishes a general notice of proposed rulemaking for any proposed rule, the agency is required to prepare an IRFA describing the impacts of the proposed rule on small entities. Agencies also are required to prepare a Final Regulatory Flexibility Analysis (FRFA) when they promulgate a final rule. However, agencies may forgo the preparation of a regulatory flexibility analysis if they can certify that the rule would not have a significant economic impact on a substantial number of small entities. The IRFA was prepared to further evaluate the economic impacts of the three quota alternatives on small business entities.

##### **3.1.1 Description of the Reasons Why Action by the Agency is being Considered**

A complete description of the purpose and need and objectives of this proposed rule is found under section 4.0 of the EA. A statement of the problem for resolution is also presented under section 4.0 of the EA.



### **3.1.2 The Objectives and Legal Basis of the Proposed Rule**

A complete description of the objectives of this proposed rule is found under section 4.2 of the EA. This action is taken under the authority of the MSFCMA and regulations at 50 CFR part 648.

### **3.1.3 Estimate of the Number of Small Entities**

The potential number of small entities that may be affected by the proposed rule is presented below.

### **3.1.4 Reporting Requirements**

This action does not contain any new collection of information, reporting, or record-keeping requirements.

### **3.1.5 Conflict with Other Federal Rules**

This action does not duplicate, overlap, or conflict with other Federal rules.

A description of the bluefish fisheries is presented in section 6.0 of the EA and section 2.3 of Amendment 1 to the Bluefish FMP. A description of ports and communities is found in the 2002 Bluefish Specifications Document (MAFMC 2001). Additionally, the “top bluefish ports” that landed bluefish in 2008 are identified in section 6.4.3 of the EA. An analysis of permit data is also found in section 6.4 of the EA. A full description of the alternatives analyzed in this section and the TAL derivation process is presented in sections 4.3 and 5.0 of the EA. In addition, a brief description of each alternative is presented below for reference purposes.

The Small Business Administration (SBA) defines a small business in the commercial fishing and recreational fishing activity, as a firm with receipts (gross revenues) of up to \$4.0 and \$6.5 million, respectively. This rule could affect any vessel that fish for bluefish in Federal or state waters. The final measures regarding the 2010 quotas could affect any vessel holding an active Federal permit for bluefish as well as vessels that fish for this species in state waters.

An active participant in the commercial sector was defined as being any vessel that reported having landed one or more pounds of bluefish the dealer data during calendar year 2008. This data covers activity by unique vessels. Of the active vessels reported in 2008, 624 known vessels landed bluefish from Maine through North Carolina. The dealer data does not cover vessel activity in the South Atlantic. In 2008, North Carolina bluefish landings were reported as canvass (summary) data by the NMFS and all landings were attributed to one vessel (conversely, dealer data indicate that 75 vessels landed bluefish in North Carolina in 2007). The North Carolina landings data for bluefish may be incomplete in this data system. South

Atlantic Trip Ticket Report data indicate that 908 vessels landed bluefish in North Carolina in 2008 (Stephanie McInerny, NC Division of Marine Fisheries, pers. comm., 2009). In addition, up to 685 vessels may have landed bluefish in Florida's east coast in 2008 (Steve Brown, Fla Fish and Wildlife Conservation Commission, pers. comm., 2009). Bluefish landings in Georgia and South Carolina were almost nil in 2008, representing a negligible proportion of the total bluefish landings along the Atlantic coast; as such, it was assumed that no vessel activity for those two states took place in 2008. In addition, it was estimated that in recent years approximately 2,063 party/charter vessels may have been active and/or caught bluefish.

Not all landings and revenues reported through the dealer data can be attributed to a specific vessel. Vessels with no Federal permits are not subject to any Federal reporting requirements with which to corroborate the dealer reports. Similarly, dealers that buy exclusively from state water only vessels and have no Federal permits are also not subject to Federal reporting requirements. Thus, it is possible that some vessel activity cannot be tracked with the landings and revenue data that are available. Thus, these vessels cannot be included in the threshold analysis, unless each state was to report individual vessel activity through some additional reporting system - which currently does not exist. This problem has two consequences for performing threshold analyses. First, the stated number of entities subject to the regulation is a lower bound estimate. Second, the portion of activity by these uncounted vessels may cause the estimated economic impacts to be over- or underestimated.

The effects of actions were analyzed by employing quantitative approaches to the extent possible. In the current analysis, effects on profitability associated with the proposed management measures should be evaluated by looking at the impact the proposed measures on individual vessel costs and revenues. However, in the absence of cost data for individual vessels engaged in this fishery, changes in gross revenues are used as a proxy for profitability. Where quantitative data were not available, qualitative analyses were conducted.

Procedurally, the economic effects of the commercial quota alternatives were estimated as follows. First, the Northeast dealer data were queried to identify all vessels that landed at least one or more pounds of bluefish in calendar year 2008 in the North Atlantic region. Note that the States of Connecticut and Delaware report canvas (summary) data to NMFS, so landings and revenues by individual vessels cannot be included. Thus, vessels that land exclusively in those states cannot be analyzed. Vessels that land in these, plus other states, are analyzed - but landings and revenues represent only that portion of business conducted in states other than Connecticut and Delaware. It is presumed that the impacts on vessels that cannot be identified will be similar to the participating vessels that are analyzed herein. Recent South Atlantic Trip Ticket Report data was also used to identify the vessels that landed bluefish in North Carolina and Florida's east coast.

The second step was to estimate total revenues from all species landed by each vessel during calendar year 2008. This estimate provides the base from which subsequent quota changes and their associated effects on vessel revenues were compared. Since 2008 is the last full year

from which data are available (partial year data could miss seasonal fisheries), it was chosen as the base year for the analysis. That is, partial landings data for 2009 were not used in this analysis because the year is not complete. Since the South Atlantic Trip Ticket Report data system does not provide information at the trip level, averages were used to describe the contribution of bluefish to total landings and values for those entities. As such, steps 3 and 4 below were conducted for averages for vessels under the South Atlantic Trip Ticket Report data.

The third step was to deduct or add, as appropriate, the expected change in vessel revenues (associated with the potential landings associated with the 2010 Council-adjusted quota compared to the 2008 landings). The NMFS Quota Report as of the week ending November 11, 2009 indicates that overall bluefish commercial landings are within the overall commercial quota for 2009. Therefore, the 2010 overall quota was not adjusted for overages.

The fourth step was to compare the estimated 2010 revenues from all species to the base year for every vessel due to the proposed quota changes. For each quota alternative a summary table was constructed that report the results of the threshold analysis. These results were further summarized by home state as defined by permit application data when applicable.

The threshold analysis just described is intended to identify impacted vessels and to characterize the potential economic impact on directly affected entities. In addition to evaluating if the proposed regulations reduce profit for a significant number of small entities, the RFA also requires that disproportionality be evaluated. Disproportionality is judged to occur when a proportionate affect on profits, costs, or net revenue is expected to occur for a substantial number of small entities compared to large entities, that is, if a regulation places a substantial number of small entities at a significant competitive disadvantage. According to the SBA definition of small business presented above, all permitted vessels in these fisheries readily fall within the definition of small business. Therefore, there are no disproportionality issues.

To further characterize the potential impacts on indirectly impacted entities and the larger communities within which owners of impacted vessels reside, selected county profiles are typically constructed. Each profile is based on impacts under the most restrictive possible alternative. The most restrictive alternative is chosen (Alternative 3) to identify impacted counties because it would identify the maximum number possible and thus include the broadest possible range of counties in the analysis. The following criteria was employed to derive the range of counties profiled: the number of vessels with revenue losses exceeding 5 percent per county was either greater than 4, or all vessels with losses exceeding 5 percent in a given state were from the same home county. It is expected that this system will allow for a county profile that may include a wide range of potentially affected areas.

Based on these criteria, a total of one county was identified: Suffolk county in New York. Counties not included in this analysis (e.g., Nassau and New York, NY) did not have enough

impacted vessels to meet the criteria specified, i.e., there were less than 4 impacted vessels per county, or all impacted vessels in a state were not home ported within the same county. In fact, these counties only had one or two affected vessel.

It should be noted that the county profiles are intended to characterize the relative importance of commercial fishing and fishing related industries in the home counties. As such, the county profiles provide a link to the socioeconomic analysis presented for each alternative in the EA but are not intended to be a substitute for that analysis. The target counties were identified based on the county associated with the vessels home port as listed in the owner's 2008 permit application.

Counties were selected as the unit of observation because a variety of secondary economic and demographic statistical data were available from several different sources. Limited data are available for place names (i.e. by town or city name) but in most instances reporting is too aggregated or is not reported due to confidentiality requirements. Reported statistics include demographic statistics, employment, wages, income, and number of establishments for each county.

#### **4.0 DESCRIPTION OF QUOTA ALTERNATIVES**

All quota alternatives considered in this analysis are based on various commercial harvest levels for bluefish (a high, medium, and low level of harvest). Table 19 shows the commercial quotas under the three alternatives evaluated in this analysis and their state-by-state distribution. Table 35 shows the percentage change of the 2010 allowable commercial landings (adjusted for RSA) relative to the 2008 landings. Note that the overall changes in commercial fishing opportunity in 2010 compared to 2008 landings are 68, 70, and 60 percent increases for Alternatives 1 (Preferred), 2, and 3 (status quo), respectively. While most states show similar directional changes in fishing opportunities as the overall change in fishing opportunity in 2010 compared to 2008 landings under all quota alternatives, the state of New York show a reduction in fishing opportunity under all three alternatives. The state of New York show a reduction in bluefish landings in 2010 because this state landed a substantially higher amount of bluefish in 2008 compared to the initial quota allocated to that state that year.

Quota Alternatives 1, 2, and 3 are based on a TAL of 29.264, 33.563, and 29.356 M lb, respectively. A complete description of the derivation of the TAL and its allocation to the commercial and recreational sectors is presented in sections 4.3 and 5.0 of the EA. In addition, the final management measures are also briefly described in section 2.5 of the RIR/IRFA. Under Alternative 1 (preferred), the Council-adjusted commercial quota and recreational harvest limit for 2010 are 10.051 (the 2<sup>nd</sup> least restrictive commercial quota) and 18.335 M lb, respectively. Under non-preferred Alternative 2, the Council-adjusted commercial quota and recreational harvest limit for 2010 are 10.185 (the least restrictive commercial quota) and 22.371 M lb, respectively. Under non-preferred Alternative 3 (Status Quo/No Action), the

Council-adjusted commercial quota and recreational harvest limit for 2010 are 9.534 (the most restrictive commercial quota) and 18.942 M lb, respectively.

## **5.0 ANALYSIS OF IMPACT OF ALTERNATIVES**

For the purpose of analysis under the following alternatives, several assumptions were made. Participation and revenue changes noted in this analysis were made using the Northeast dealer and South Atlantic Trip Ticket Report data. That is all vessels that landed at least one or more pounds bluefish in calendar year 2008 were identified. Total revenues from all species landed by each vessel during calendar year 2008 were estimated using the dealer data. Since the dealer data only provides information from Maine through North Carolina, Trip Ticket Report data was also used to assess potential average revenues from all species landed from North Carolina through Florida during calendar year 2008. These estimates provided the base from which to compare the effects of the 2010 Council-adjusted quota compared to the 2008 landings and associated potential changes in revenues.

As indicated above, all three evaluated alternatives, the overall Council-adjusted commercial quotas for 2010 would allow for a substantial increase in landings compared to 2008. While the overall, coastwide commercial quotas under all three alternatives would allow for increased landings, the state of New York is projected to have a smaller 2010 bluefish quota when compared to 2008 landings because that state landed a substantially higher amount of bluefish in 2008 compared to the originally allocated commercial quota that year. There is no indication that the market environment for commercially caught bluefish will change considerably in year 2010. As such, for states that show a 2010 quota allocation greater than their 2008 landings, it is assumed that 2010 landings would be equal to the 2008 landings. However, for states that show a 2010 quota allocation smaller than their 2008 landings (i.e., New York), the 2010 allocation is considered for analysis purposes.

It is most likely that the percent of revenue reduction for impacted vessels varied considerably based on permits it held (i.e., based on the fisheries in which it was able to participate) and species it landed. Diversity in the fleet, perhaps, helps to balance loss in one fishery with revenue generated from other fisheries. For example, if 90 percent of a vessel's revenue was derived from bluefish in the base year, then a small decrease in the bluefish quota or landings level would be expected to have a large proportional reduction in the revenue of that vessel compared to one that only generates 10 percent of its revenue from bluefish. Lastly, it is important to keep in mind that while the analyses based on landings for federally-permitted vessels only (dealer data), those vessels may be permitted to, and frequently do, fish in state waters for a species of fish for which it does not hold a Federal permit.

Bluefish comprised 0.19 percent and 0.43 percent of the total ex-vessel value and pounds, respectively of all finfish and shellfish species landed along the Atlantic coast of the U.S. in 2008. For states where bluefish were commercially landed, the contribution of bluefish to the total value of all finfish and shellfish varied by state in 2008 (Table 2). Bluefish ranged from

less than 0.01 percent of total commercial value in Maine, South Carolina, and Georgia to 1.16 percent in New York. There were no bluefish landings in Pennsylvania in 2008. Relative to total landings value, bluefish were most important in New York and North Carolina, contributing the largest percentage of ex-vessel value of all commercial landings in those states. This contribution did not change considerably from the previous complete fishing year (i.e., 2008), and it is not expected to change considerably in 2010.

## **5.1 Quota Alternative 1**

To analyze the economic effects of this alternative, the total harvest limits specified in sections 4.3 and 5.0 of the EA were employed. Under this alternative, the allocation to the commercial sector is approximately 68 percent higher than the 2008 commercial landings. The recreational allocation under this alternative is near identical (approximately 3 percent below) the recreational landings for 2008.

Even though the overall commercial allocation for 2010 is higher than the 2008 landings, when this allocation is distributed to the states, all states except New York show a 2010 quota level which is higher than their 2008 landings (Tables 19 and 35). This is due to the fact that New York landed a substantially higher amount of bluefish in 2008 compared to their originally allocated commercial quota that year. For states that show a 2010 quota level that is lower than their 2008 landings (New York; Tables 19 and 35), their 2010 landings will be constrained by the 2010 quota when compared to landings in 2008.

Under Amendment 1, states would be allowed to trade or combine quotas and the states could impose trip limits or other measures to manage their quotas. The system is the same as that operating under the Summer Flounder FMP. In most cases, quotas are transferred among states when fishing fleets follow migration routes of valuable fish stocks. Such is the case in the summer flounder fishery. For example, if summer flounder is present in the northern part of the Atlantic Ocean at a specific time of the year and a vessel from a southern state harvests and lands summer flounder in a northern state, then a quota transfer from the southern state can be made to the northern state. This allows vessels to land in a port close to where they are fishing and avoid returning to their home state or principal port to offload their catch. This is of special importance when you have valuable species that have to enter the market in a timely fashion, or have species that may have shorter shelf life. It is not expected that commercial vessels will travel large distances to catch bluefish. However, quota transfers in the bluefish fishery have been made to allow states that have harvested their quota levels (i.e., that have been constrained by the initial quota) to continue to fish for bluefish in previous years. It is possible that bluefish quota could be transferred among states and that the initial quotas for the states with constraining 2010 quotas be increased by the amounts transferred. Given that under this alternative the overall commercial quota in 2010 is higher than the 2009 quota and the 2008 landings, the amount of bluefish that could potentially be transferred among states would be higher than under Alternatives 3 and near identical that under Alternative 2, thus potentially allowing for more economic relief.

## **5.1.1 Commercial Impacts**

### **5.1.1.1 Threshold Analysis for Participating Vessels**

The results of the threshold analysis from dealer data are reported in Table 20. The analysis of the harvest levels under this alternative indicates that the economic impacts ranged from no change in revenues for 493 vessels to revenue losses of more than 5 percent for 9 vessels. More specifically, 6 vessels were projected to incur revenue losses of 5-9 percent and 3 vessels of 10-19 percent. In addition, 124 vessels were projected to incur revenue losses of less than 5 percent.

Council staff further examined the level of ex-vessel revenues for the impacted vessel to further assess impacts. For example, according to dealer data, it was estimated that 33 percent of the vessels (2 out of 6 vessels) projected to incur revenue reductions of 5-9 percent had total gross sales (all possible species combined not just bluefish in 2008) of \$1,000 or less and 83 percent (5 vessels) had total gross sales of \$10,000 or less. Furthermore, 100 percent of the vessels (3 out of 3 vessels) projected to incur revenue losses of 10-19 percent had total gross sales of approximately \$200 or less.

While the analysis presented above indicates that in relative terms a small number of vessels (9) are likely to be impacted with revenue reductions of more than 5 percent or more, 56 percent of these vessels (5 vessels) had gross sales of \$1,000 or less and 89 percent of the impacted vessels (8 vessels) had gross sales of \$10,000 or less, thus likely indicating that the dependence on fishing for some of these vessels is very small. Furthermore, no revenue reduction is expected for vessels that land bluefish in North Carolina and Florida as a consequence of the proposed 2010 quota compared to 2008 landings in those states (Tables 19 and 35).

Impacts of the quota provision were examined relative to a vessel's home state as reported on the vessel's permit application (Table 21). "Home state" indicates the state where a vessel is based and primarily ported, and is presumed to reflect to where the costs and benefits of management actions return. However, home state is self-reported at the time an individual applies for a Federal permit and may not necessarily indicate where the vessel subsequently conducts most of its activity. The number of vessels with revenue reduction of less than 5 percent by home state ranged from 1 in each Maryland, North Carolina, and New Hampshire to 92 in New York. Seven vessels with revenue reduction of 5 percent or more are in New York. The larger number of impacted vessels with revenue reduction of 5 percent or more in New York may be due to a relatively higher dependence on bluefish. Additional descriptive statistics regarding these vessels is presented in section 7.1.4 of the EA.

Additional information regarding other permit held by the impacted vessels, descriptive information and distribution information for the impacted vessels with revenue losses of 5 percent or more under this alternative are presented in Tables 22-24.

The changes described above are based on the potential changes in landings associated with the 2010 quotas versus 2008 landings. Amendment 1 implemented a transfer provision as a tool to mitigate the adverse economic impacts of prematurely closing a fishery when surplus quota exists. In fact, under the Interstate Management Plan for Atlantic Bluefish, states have been very cooperative in transferring commercial bluefish quota when needed to states that are running a deficit. If quota allocations were to be transferred from a state or states that do not land their entire bluefish quota allocation for 2010, then the number of affected entities described in this threshold analysis could potentially decrease, thus decreasing economic burden.

### **5.1.2 Recreational Impacts**

Under Alternative 1, the Council-adjusted bluefish 2010 recreational harvest limit would be 18.335 M lb. This limit would be approximately 3 percent below the recreational landings for 2008 (18.900 M lb) and 6 percent below the limit implemented for 2009 (19.528 M lb). The possession limit would remain at 15 fish. In this document it is suggested that the recreational landings for 2008 be applied to 2010 for calculation of the recreational harvest limit as a placeholder until a projection can be made when more complete data are available (sections 1.0 and 4.3 of the EA). Recreational landings in 2008 (18.900 M lb) are not are not radically different from average recreational landings for the past five years (section 4.3 of the EA). The proposed adjusted recreational harvest limit under this alternative is near identical (less than 3 percent lower) than the projected recreational landings for 2010. There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the Council-adjusted recreational harvest limit for 2010 and recreational landings in recent years, it is possible that the proposed recreational harvest limit under this alternative may cause some slight decrease in recreational satisfaction (i.e., 2010 harvest limit slightly lower than projected 2010 recreational landings). Note: It is possible that future update of recreational landings projections done by the NMFS (when more data is available, e.g., following wave 5 of the MRFSS data) could result in adjustment transfers different from those presented in this specifications package (section 4.3 of the EA).

There is no information regarding how the potential decrease in the recreational harvest limits for this species will affect the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable; however, it is possible that given the proposed recreational harvest limits associated with this alternative, the demand for party/charter boat trips may be slightly negatively impacted. Some anglers may that choose to reduce their effort in 2010 as a consequence of the recreational harvest limit are likely to transfer this effort to alternative species (i.e., spot, weakfish, striped bass, tautog, pelagics, etc.) resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing.



### Effects of research set-aside quota

The Council recommended a maximum bluefish RSA of 3 percent of the implemented TAL. Specifically, an RSA of 0.878, 1.007, and 0.881 M lb have been recommended for bluefish under Alternatives 1, 2, and 3, respectively. For analysis of the impacts of each of the alternatives in this specifications document, the RSA amounts deducted from each initial TAL are 3 percent of the TAL.

The economic analysis regarding changes in the commercial TALs for the bluefish fisheries conducted under this alternative, as well as the other alternatives analyzed, incorporated adjustments for the quota specifications for 2010. That is, the RSA for bluefish was deducted from the initial overall TAL for 2010 to derive Council-adjusted 2010 quotas. Therefore, the threshold analyses conducted under each alternative has accounted for overall reductions in fishing opportunities to all vessels typically participating in this fishery due to RSA. A detailed description of the potential impacts of the RSA is presented in sections 7.4 of the EA and 5.4 below.

The actual RSA for fishing year 2010 will depend on the specific amounts requested by the approved research projects. NMFS will adjust quotas based on updated information on RSA, overages and/or transfers as part of the final rule that implements the 2010 specifications when the data are more complete.

#### **5.1.3 Summary of Impacts**

In sum, Alternative 1 would result in a commercial and recreational allocation that is approximately 68 percent higher and less than 3 percent lower, respectively, lower than the commercial and recreational landings for 2008.

Under this alternative, according to dealer data, a total of 9 of the 626 commercial vessels reporting landings in 2008 were projected to incur revenue losses of 5 percent or more. Furthermore, 124 vessels were projected to incur in revenue losses of less than 5 percent. A closer look to the overall vessel activity of the 9 vessels projected to incur in revenue losses of 5 percent or more indicate that 56 percent of these vessels (5 vessels) had gross sales of \$1,000 or less and 89 percent of the impacted vessels (8 vessels) had gross sales of \$10,000 or less, thus likely indicating that the dependence on fishing for some of these vessels is very small. No revenue reduction is expected for vessels that land bluefish in North Carolina and Florida as a consequence of the proposed 2010 quota compared to 2008 landings in those states.

Given the potential decrease (less than 3 percent) in the proposed 2010 recreational harvest limit when compared to 2008 landings, it is possible that the angler satisfactions and/or the demand for party/charter boat trips may be slightly negatively impacted.

It is important to stress that these changes represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels.

This alternative was chosen by the Council because it is associated with a more risk-averse F target for 2010 when compared to Alternative 2 (see sections 1.0, 4.3 and 5.0 of the EA for additional discussion). However, the potential economic losses associated with this alternative are higher than those under Alternative 2 but lower than those under Alternative 3.

## **5.2 Quota Alternative 2**

To analyze the economic effects of this alternative, the total harvest limits specified in sections 4.3 and 5.0 of the EA were employed. Under this alternative, the allocation to the commercial fishery is 70 percent above the 2008 commercial landings. The recreational allocation under this alternative is approximately 18 percent above the recreational landings for 2008.

Even though the overall commercial allocation for 2010 is higher than the 2008 landings, when this allocation is distributed to the states, all states except New York show a 2010 quota level which is higher than their 2008 landings (Tables 19 and 35).

As stated before (section 5.1 of the RIR/IRFA), under Amendment 1, states would be allowed to trade or combine quotas and the states could impose trip limits or other measures to manage their quotas. These quota transfers have allowed states that have been constrained by their initial quota levels to harvest additional bluefish in previous years. It is possible that bluefish quota could be transferred among states and that the initial quotas for the states with constraining 2010 quotas be increased by the amounts transferred.

### **5.2.1 Commercial Impacts**

#### **5.2.1.1 Threshold Analysis for Participating Vessels**

The results of the threshold analysis from dealer data are reported in Table 25. A total of 7 vessels were projected to incur revenue losses of more than 5 percent. More specifically, 4 vessels were projected to incur in revenue losses of 5-9 percent and 3 vessels of 10-19 percent. In addition, 126 vessels were projected to incur in revenue losses of less than 5 percent and 493 vessels were projected to have no change in revenue relative to 2008.

Council staff further examined the level of ex-vessel revenues for the impacted vessel to further assess impacts. For example, according to dealer data, it was estimated that 50 percent of the vessels (2 out of 4 vessels) projected to incur revenue reductions of 5-9 percent had total gross sales (all possible species combined not just bluefish in 2008) of \$1,000 or less and 100 percent (4 vessels) had total gross sales of \$10,000 or less. Furthermore, 100 percent of the

vessels (3 out of 3 vessels) projected to incur revenue losses of 10-19 percent had total gross sales of approximately \$200 or less.

While the analysis presented above indicates that in relative terms a small number of vessels (7) are likely to be impacted with revenue reductions of more than 5 percent or more, 71 percent of these vessels (5 vessels) had gross sales of \$1,000 or less and 100 percent of the impacted vessels (7 vessels) had gross sales of \$10,000 or less, thus likely indicating that the dependence on fishing for some of these vessels is very small. Furthermore, no revenue reduction is expected for vessels that land bluefish in North Carolina and Florida as a consequence of the proposed 2010 quota compared to 2008 landings in those states (Tables 19 and 35).

Impacts of the quota provision were examined relative to a vessel's home state as reported on the vessel's permit application (Table 26). "Home state" indicates the state where a vessel is based and primarily ported, and is presumed to reflect to where the costs and benefits of management actions return. However, home state is self-reported at the time an individual applies for a Federal permit and may not necessarily indicate where the vessel subsequently conducts most of its activity. The number of vessels with revenue reduction of less than 5 percent by home state ranged from 1 in each Maryland, North Carolina, and New Hampshire to 93 in New York. Six vessels with revenue reduction of 5 percent or more are in New York. The larger number of impacted vessels with revenue reduction of 5 percent or more in New York may be due to a relatively higher dependence on bluefish. Additional descriptive statistics regarding these vessels is presented in section 7.1.4 of the EA.

Additional information regarding other permit held by the impacted vessels, descriptive information and distribution information for the impacted vessels with revenue losses of 5 percent or more under this alternative are presented in Tables 27-29.

The changes described above are based on the potential changes in landings associated with the 2010 quotas versus 2008 landings. Amendment 1 implemented a transfer provision as a tool to mitigate the adverse economic impacts of prematurely closing a fishery when surplus quota exists. In fact, under the Interstate Management Plan for Atlantic Bluefish, states have been very cooperative in transferring commercial bluefish quota when needed to states that are running a deficit. If quota allocations were to be transferred from a state or states that do not land their entire bluefish quota allocation for 2010, then the number of affected entities described in this threshold analysis could potentially decrease, thus decreasing economic burden.

### **5.2.2 Recreational Impacts**

Under Alternative 2, the bluefish 2010 recreational harvest limit would be 22.371 M lb. This limit would be approximately 18 percent higher than the recreational landings for 2008 (18.900 M lb) and 15 percent larger than the recreational harvest limit for 2008 (19.528 M lb). The possession limit would remain at 15 fish. Projected recreational landings for 2010 of 18.900 M lb (section 5.1.2 above). The proposed Council-adjusted recreational harvest limit under this alternative is approximately 18 percent higher than the projected recreational landings for 2010. There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the recreational harvest limit for 2010 and recreational landings in recent years, it is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit. In addition, the recreational possession limit remains unchanged for 2010.

### **5.2.3 Summary of Impacts**

In sum, Alternative 2 would result in a 70 percent increase in commercial bluefish landings in 2010 compared to 2008 landings. The 2009 recreational harvest limit is 18 percent higher than the recreational landings in 2008.

Under this alternative, according to dealer data, a total of 7 of the 626 commercial vessels reporting landings in 2008 were projected to incur revenue losses in the 5 percent or more. Furthermore, 126 vessels were projected to incur in revenue losses of less than 5 percent. A closer look to the overall vessel activity of the 7 vessels projected to incur in revenue losses of 5 percent or more indicate that 100 percent of these vessels (7 vessels) had gross sales of \$1,000, thus likely indicating that the dependence on fishing for some of these vessels is very small. No revenue reduction is expected for vessels that land bluefish in North Carolina and Florida as a consequence of the proposed 2010 quota compared to 2008 landings in those states.

This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit.

It is important to stress that these changes represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels. In addition, if quota allocations were to be transferred from a state or states that do not land their entire bluefish quota allocation for 2010 to states that are constrained by the 2010 allocation, then the number of affected entities described in this threshold analysis could potentially decrease, thus decreasing economic burden.

There should be no adverse economic or social impacts associated with the RSA. The RSAs are expected to yield important long-term benefits associated with improved data upon which to base management decisions.

The commercial losses associated with this alternative are the smallest among all alternatives evaluated. This alternative was not chosen by the Council because it is not associated with a more risk-averse F target for 2010 when compared to Alternative 1.

### **5.3 Quota Alternative 3 (Status Quo/No Action Alternative)**

To analyze the economic effects of this alternative, the total harvest limits specified in sections 4.3 and 5.0 of the EA were employed. Under this alternative, the allocation to the commercial sector is approximately 60 percent higher than the 2008 commercial landings. The recreational allocation under this alternative is near identical (less than 1 percent higher) the recreational landings for 2008.

As with Alternatives 1 and 2, even though the overall commercial allocation for 2009 is higher than the 2008 landings, when this allocation is distributed to the states, all states except New York show a 2010 quota level which is higher than their 2008 landings (Tables 19 and 35).

As stated before (section 5.1 of the RIR/IRFA), under Amendment 1, states would be allowed to trade or combine quotas and the states could impose trip limits or other measures to manage their quotas. These quota transfers have allowed states that have been constrained by their initial quota levels to harvest additional bluefish in previous years. It is possible that bluefish quota could be transferred among states and that the initial quotas for the states with constraining 2010 quotas be increased by the amounts transferred.

Even though the TAL under Alternative 3 is the status quo measure, the 2010 Council-adjusted bluefish commercial quota and recreational harvest limit under this alternative are slightly different (lower) than the adjusted quota and recreational harvest limit implemented in 2009 mainly due to differences between the RSA amounts used to adjust the TALs between those two time periods.

#### **5.3.1 Commercial Impacts**

##### **5.3.1.1 Threshold Analysis for Participating Vessels**

The results of the threshold analysis from dealer data are reported in Table 30. A total of 12 vessels were projected to incur revenue losses of more than 5 percent. More specifically, 8 vessels were projected to incur in revenue losses of 5-9 percent, 1 vessel of 10-19 percent, and 3 vessels of vessel of 20-29 percent. In addition, 121 vessels were projected to incur in revenue losses of less than 5 percent and 493 vessels were projected to have no change in revenue relative to 2008.

Council staff further examined the level of ex-vessel revenues for the impacted vessel to further assess impacts. For example, according to dealer data, it was estimated that 13 percent of the vessels (1 out of 8 vessels) projected to incur revenue reductions of 5-9 percent had total gross sales (all possible species combined not just bluefish in 2008) of \$1,000 or less and 63 percent (5 out of 8 vessels) had total gross sales of \$10,000 or less. Furthermore, 100 percent of the vessels (3 out of 3 vessels) projected to incur revenue losses of 10-29 percent had total gross sales of approximately \$200 or less.

While the analysis presented above indicates that in relative terms a small number of vessels (12) are likely to be impacted with revenue reductions of more than 5 percent or more, 42 percent of these vessels (5 vessels) had gross sales of \$1,000 or less and 75 percent of the impacted vessels (9 vessels) had gross sales of \$10,000 or less, thus likely indicating that the dependence on fishing for some of these vessels is very small. Furthermore, no revenue reduction is expected for vessels that land bluefish in North Carolina and Florida as a consequence of the proposed 2010 quota compared to 2008 landings in those states (Tables 19 and 35).

Impacts of the quota provision were examined relative to a vessel's home state as reported on the vessel's permit application (Table 31). "Home state" indicates the state where a vessel is based and primarily ported, and is presumed to reflect to where the costs and benefits of management actions return. However, home state is self-reported at the time an individual applies for a Federal permit and may not necessarily indicate where the vessel subsequently conducts most of its activity. The number of vessels with revenue reduction of less than 5 percent by home state ranged from 1 in each Maryland, North Carolina, and New Hampshire to 91 in New York. Eight vessels with revenue reduction of 5 percent or more are in New York. The larger number of impacted vessels with revenue reduction of 5 percent or more in New York may be due to a relatively higher dependence on bluefish. Additional descriptive statistics regarding these vessels is presented in section 7.1.4 of the EA.

Additional information regarding other permit held by the impacted vessels, descriptive information and distribution information for the impacted vessels with revenue losses of 5 percent or more under this alternative are presented in Tables 32-34.

The changes described above are based on the potential changes in landings associated with the 2010 quotas versus 2008 landings. Amendment 1 implemented a transfer provision as a tool to mitigate the adverse economic impacts of prematurely closing a fishery when surplus quota exists. In fact, under the Interstate Management Plan for Atlantic Bluefish, states have been very cooperative in transferring commercial bluefish quota when needed to states that are running a deficit. If quota allocations were to be transferred from a state or states that do not land their entire bluefish quota allocation for 2010, then the number of affected entities described in this threshold analysis could potentially decrease, thus decreasing economic burden.

### **5.3.2 Recreational Impacts**

Under Alternative 3, the bluefish 2010 recreational harvest limit would be 18.942 M lb. This limit would be near identical (less than 1 percent higher) the recreational landings for 2008 (18.900 M lb) and 3 percent below the limit implemented for 2009 (19.528 M lb). The possession limit would remain at 15 fish. Projected recreational landings for 2010 of 18.900 M lb (section 5.1.2 above). The proposed Council-adjusted recreational harvest limit under this alternative is near identical the projected recreational landings for 2010. There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the recreational harvest limit for 2010 and recreational landings in recent years, it is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit. In addition, the recreational possession limit remains unchanged for 2010.

### **5.3.3 Summary of Impacts**

In sum, under this alternative, the allocation to the commercial and recreational fisheries is approximately 60 percent higher and near identical (less than 1 percent higher) the recreational landings for 2008, respectively.

Under this alternative, according to dealer data, a total of 12 of the 626 commercial vessels reporting landings in 2008 were projected to incur revenue losses of 5 percent or more. Furthermore, 121 vessels were projected to incur in revenue losses of less than 5 percent. A closer look to the overall vessel activity of the 12 vessels projected to incur in revenue losses of 5 percent or more indicate that 41 percent of these vessels (5 vessels) had gross sales of \$1,000 or less and 75 percent of the impacted vessels (9 vessels) had gross sales of \$10,000 or less, thus likely indicating that the dependence on fishing for some of these vessels is very small. No revenue reduction is expected for vessels that land bluefish in North Carolina and Florida as a consequence of the proposed 2010 quota compared to 2008 landings in those states.

This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit.

It is important to stress that these changes represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels. In addition, if quota allocations were to be transferred from a state or states that do not land their entire bluefish quota allocation for 2010 to states that are constrained by the 2010 allocation, then the number of affected entities described in this threshold analysis could potentially decrease, thus decreasing economic burden.

There should be no adverse economic or social impacts associated with the RSA. The RSAs are expected to yield important long-term benefits associated with improved data upon which to base management decisions.

The commercial losses associated with this alternative are slightly higher than in Alternatives 1 and 2.

#### **5.4 Research Set-Aside Alternatives**

The purpose of the RSA program is to support research and the collection of additional data that would otherwise be unavailable. Through the RSA program, the Council encourages collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made. Reserving a small portion of the annual harvest of a species to subsidize the research costs of vessel operations and scientific expertise is considered an important investment in the future of the nation's fisheries.

An additional benefit that is sought from this program is the assurance that new data collected by non-governmental entities will receive the peer review and analysis necessary so that data can be utilized to improve the management of public fisheries resources. The annual RSA amount may vary between 0 and 3 percent of a species' quota. For those species that have both a commercial quota and an RHL, the set-aside calculation shall be made from the combined TAL.

##### **5.4.1 No Research Set-Aside (No Action)**

Under this alternative there will be no RSA deducted from the overall TAL. Therefore, the initial commercial quota and recreational harvest limit does not need to be adjusted downward as it would be done under a situation when an RSA is established. No adverse economic impacts are expected for vessels that land bluefish under this alternative. However, under this alternative the collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made will cease.

##### **5.4.2 Specify a Research Set-Aside for 2010**

The MAFMC recommended RSA quota of up to 3 percent of the bluefish TAL for 2010. As indicated above, this would result in RSAs of up to 0.878, 1.007, and 0.881 M lb under Alternatives 1, 2, and 3, respectively.

Under this program, successful applicants receive a share of the annual quota for the purpose of conducting scientific research. The Nation receives a benefit in that data or other information about that fishery is obtained for management or stock assessment purposes that would not otherwise be obtained. In fisheries where the entire quota would be taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of



the program are shared among the non RSA participants in the fishery. That is, each participant in a fishery that utilizes a resource that is limited by the annual quota relinquishes a share of the amount of quota retained in the RSA quota.

The economic discussion of the evaluated commercial quotas and recreational harvest limits discussed in sections 5.1, 5.2, and 5.3 of the RIR/IRFA were based on adjusted commercial quotas accounting for the RSA proposed under this alternative.

Preliminary NMFS dealer data from Maine through Virginia and South Atlantic General Canvass data were used to derive the ex-vessel price for bluefish from Maine through Florida's east coast. The ex-vessel price for bluefish in 2008 was estimated at \$0.44/lb. Assuming this ex-vessel price, the 2010 RSA for the commercial component of the fishery, using the full 3 percent of the TAL, could be worth approximately as much as \$0.137 M under Alternative 1, \$0.139 M under Alternative 2, and \$0.130 under Alternative 3.

As such, on a per vessel basis, the commercial RSA could result in a potential decrease in bluefish revenues of approximately \$76, \$77, or \$72 under Alternatives 1, 2, and 3, respectively, per vessel assuming all active vessels in 2008 (approximately 1,800 vessels). The adjusted commercial quotas analyzed in sections 7.1, 7.2, and 7.3 account for the RSA (as described in sections 4.3 and 5.0 of the EA). If RSA is not used, the landings would be included in the overall TAL for each fishery. As such, the estimated economic impacts would be smaller than those estimated under each alternative discussed in sections 5.1 through 5.3.

Changes in the recreational harvest limit due to the RSA would be nil; the recreational limit under all there alternatives would change (i.e., reduction) by 3 percent as a consequence of the RSA. For the most part, it is not anticipated that the RSA would affect angler satisfaction or recreational demand for bluefish with the potential exception of Alternative 1. As stated section 5.1 of the EA, the TAC associated with Alternative 1 is 34.376 M lb, the initial commercial quota and recreational harvest limit (post transfer) under Alternative 1 is 10.362 M lb and an RHL of 18.902 M lb, respectively. The Council approved an RSA for bluefish of up to 3 percent of the TAL. Adjusting these values for RSA (0.878 M lb) would result in a Council-adjusted commercial quota of 10.051 M lb and an RHL of 18.335 M lb. As such, adjusting the initial commercial quota and recreational harvest limits to reflect a 3 percent reduction in the TAL as a consequence of the RSA would yield a Council-adjusted recreational harvest limit slightly below the projected recreational landings for 2010 (18.900 M lb; section 4.3 of the EA). As indicated in section 7.1.4 of the EA, there is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the Council-adjusted recreational harvest limit for 2010 and recreational landings in recent years, it is possible that the proposed recreational harvest limit under this alternative may cause some slight decrease in recreational satisfaction (i.e., 2010 harvest limit slightly lower than projected 2010 recreational landings).

The cost of any premature closure of the fishery (pounds of bluefish allocated for set-aside) would be shared among the non-RSA participants in the fishery. In addition, it is possible that the vessels that will be used by researchers will not be vessels that have traditionally fished for bluefish. As such, permit holders that land these species during a period where the quota has been reached and the fishery closed could be disadvantaged. However, given that the proposed Council-adjusted commercial quota under Alternative 1 (Preferred TAL alternative) is 4 percent higher than the commercial quota implemented in 2009 and about 68 percent higher than the 2008 commercial landings, it is not expected that the extent of RSA activity under this alternative would result in significant overall impacts of research trips and compensation trips are expected to be negligible.

It is important to stress that the RSA amount used to evaluate the alternatives presented in this document is the maximum RSA allowed (3 percent of the TAL) to support collaborative research projects among the public, research institutions, and NMFS. The actual RSA for fishing year 2010 will depend on the specific amounts requested by the approved research projects. NMFS will adjust quotas based on updated information on RSA, overages and/or transfers as part of the final rule that implements the 2010 specifications when the data are more complete.

The impacts of the RSAs for other species are addressed in their respective species specifications packages, e.g., summer flounder, scup, and black sea bass in the 2010 specifications package for those species.

## **6.0 OTHER IMPACTS**

### **6.1 County Impacts**

For the reasons specified in section 3.1 of this RIR/IRFA, the economic impacts on vessels of a specified home port were analyzed on a county wide basis. The profile of impacted counties was based on impacts under various alternatives evaluated. Counties included in the profile had to meet the following criteria: the number of vessels with revenue loss exceeding 5 percent per county was either greater than 4, or all vessels with revenue loss exceeding 5 percent in a given state were from the same home county.

Based on these criteria, a total of one county was identified: Suffolk, NY. Counties not included in this analysis (e.g., Nassau and New York, NY) did not have enough impacted vessels to meet the criteria specified, i.e., there were less than 4 impacted vessels per county, or all impacted vessels in a state were not home ported within the same county. In fact, these counties only had one or two affected vessels.

Table 36 details population, employment personal income and the contribution of commercial fishing and sea food processing to total personal income for Suffolk county (NY). Counties presented in Table 36 correspond to the counties identified as impacted ( $\geq 4$  vessels with

revenue loss exceeding 5 percent per county) due to the management measures evaluated (i.e., as described in the above paragraph). Data presented in Table 36 were obtained from data bases supplied by the Minnesota IMPLAN Group for the calendar year 2001.

Of the county identified in Table 36, the percentage of total personal income derived from commercial fishing sales and from seafood processing was less than 1 percent. This information indicates that Suffolk county (NY) is not substantially dependent upon sales of commercial fishing products to sustain the county economies. Population in this county was estimated at 1.4 million.

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## TABLES

**Table 1. Bluefish commercial and recreational landings ('000 lb), 1981-2008.**

<b>Year</b>	<b>Comm<sup>a</sup></b>	<b>Rec<sup>b</sup></b>	<b>Total</b>	<b>% Comm</b>	<b>% Rec</b>
1981	16,454	95,288	111,742	15%	85%
1982	15,430	83,006	98,436	16%	84%
1983	15,799	89,122	104,921	15%	85%
1984	11,863	67,453	79,316	15%	85%
1985	13,501	52,515	66,016	20%	80%
1986	14,677	92,887	107,564	14%	86%
1987	14,504	76,653	91,157	16%	84%
1988	15,790	48,222	64,012	25%	75%
1989	10,341	39,260	49,601	21%	79%
1990	13,779	30,557	44,336	31%	69%
1991	13,581	32,997	46,578	29%	71%
1992	11,477	24,275	35,752	32%	68%
1993	10,122	20,292	30,414	33%	67%
1994	9,388	15,541	24,929	38%	62%
1995	7,954	14,307	22,261	36%	64%
1996	9,207	11,746	20,953	44%	56%
1997	9,002	14,302	23,304	39%	61%
1998	8,205	12,334	20,539	40%	60%
1999	7,309	8,253	15,562	47%	53%
2000	8,041	10,606	18,647	43%	57%
2001	8,688	13,230	21,918	40%	60%
2002	6,863	11,371	18,234	38%	62%
2003	7,401	13,136	20,537	36%	64%
2004	7,994	15,828	23,822	34%	66%
2005	7,045	18,132	25,177	28%	72%
2006	6,955	16,752	23,707	29%	71%
2007	7,499	21,181	28,680	26%	74%
2008	5,977	18,900	24,877	24%	76%
Avg 81-08	10,530	34,577	45,107	23%	77%
Avg 99-08	7,377	14,739	22,116	33%	67%
Avg 04-08	7,094	18,159	25,253	28%	72%

<sup>a</sup>Source: Dealer Weighout Data and South Atlantic General Canvass Data.

<sup>b</sup>Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, November 19, 2009.

**Table 2 The percentage contribution of bluefish to the commercial landings and value of all species combined from Maine through East Coast of Florida, 2008.**

<b>State</b>	<b>Pounds of Bluefish as a Percentage of all Species</b>	<b>Value of Bluefish as a Percentage of all Species</b>
<b>ME</b>	<0.01%	<0.01%
<b>NH</b>	0.08%	0.03%
<b>MA</b>	0.16%	0.08%
<b>RI</b>	0.58%	0.32%
<b>CT</b>	0.53%	0.08%
<b>NY</b>	3.71%	1.16%
<b>NJ</b>	0.63%	0.28%
<b>DE</b>	0.47%	0.32%
<b>MD</b>	0.13%	0.05%
<b>VA</b>	0.13%	0.13%
<b>NC</b>	2.71%	0.82%
<b>SC</b>	<0.01%	<0.01%
<b>GA</b>	<0.01%	<0.01%
<b>FL (East Coast)</b>	0.56%	0.09%
<b>Total</b>	0.43%	0.19%

Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, November 10, 2009; Dealer Weighout Data, as of June 1, 2009; and South Atlantic General Canvass Data as of June 8, 2009.  
Note: There were no bluefish landings reported in PA in 2008.

**Table 3. Fishing effort of the bluefish fishery relative to other fisheries by gear type from Maine through North Carolina in 2008 (VTR data).**

	GILL NET	TRAWL, OTTER, BOTTOM	HOOK AND LINE	OTHER	TOTAL
<b>Total Trips (N)</b>	18,656	29,512	7,171	52,016	107,355
<b>Trips that caught bluefish (N)</b>	2,689	3,901	1,505	179	8,274
<b>% of All Trips That Caught Bluefish by Gear (row 2/row 1)</b>	14.4%	13.2%	21.0%	0.3%	7.7%
<b>Distribution of Trips That Caught Bluefish (%)</b>	32.5%	47.1%	18.2%	2.2%	100.0%
<b>% of Directed Bluefish Trips<sup>a</sup></b>	5.4%	0.4%	7.6%	<0.1%	1.6%
<b>Directed Bluefish Trip landings (lbs)</b>	1,666,170	272,390	73,475	4,542	2,016,577

<sup>a</sup>A directed bluefish trip is a trip where bluefish is greater than 50% of the catch. These percentages reflect the proportion of total trips within a particular gear category that also qualified as "directed bluefish trips".

Source: VTR Data as of June 4, 2009.

**Table 4. Statistical areas that accounted for at least 5 percent of the bluefish catch and/or trips in 2008, NMFS VTR data. (A map showing the location of these statistical areas is presented in Figure 1).**

Statistical Area	Catch (percent)	Trips (percent)
636	15.3%	1.0%
635	12.7%	2.7%
614	11.6%	3.6%
612	11.3%	11.2%
615	9.9%	3.1%
613	9.0%	16.8%
539	6.6%	14.5%
611	4.6%	18.7%
537	2.2%	5.7%

Source: VTR Data as of June 4, 2009.

**Table 5. The percentage (%) of bluefish caught and landed by recreational fishermen for each mode, Maine through Florida, 1999-2008.**

Mode	Catch (Number A+B1+B2)	Landings (Weight A+B1)
Shore	41.4%	40.4%
Party/Charter	6.5%	13.1%
Private/Rental	52.1%	46.5%
Total	100.0%	100.0%

Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, November 10, 2009.

**Table 6. Number of bluefish recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2009.**

<b>Year</b>	<b>Number of Fishing Trips<sup>a</sup></b>	<b>Recreational Harvest Limit ('000 lb)</b>	<b>Recreational Landings ('000 lb)<sup>b</sup></b>
<b>1991</b>	5,811,446	None	32,997
<b>1992</b>	4,261,811	None	24,275
<b>1993</b>	3,999,487	None	20,292
<b>1994</b>	3,414,337	None	15,541
<b>1995</b>	3,409,966	None	14,307
<b>1996</b>	2,523,984	None	11,746
<b>1997</b>	2,021,713	None	14,302
<b>1998</b>	1,838,525	None	12,334
<b>1999</b>	1,316,939	None	8,253
<b>2000</b>	1,526,554	25,745	10,606
<b>2001</b>	2,156,043	28,258	13,230
<b>2002</b>	1,893,640	16,365	11,371
<b>2003</b>	2,100,057	26,691 <sup>c</sup>	13,136
<b>2004</b>	2,178,373	21,150 <sup>c</sup>	15,828
<b>2005</b>	2,511,295	20,157 <sup>c</sup>	18,132
<b>2006</b>	2,050,409	16,473 <sup>c</sup>	16,752
<b>2007</b>	2,649,488	18,823 <sup>c</sup>	21,181
<b>2008</b>	2,215,488	20,414 <sup>c</sup>	18,900
<b>2009</b>	NA	19,528 <sup>c</sup>	NA
<b>2010</b>	-	18,335 <sup>c</sup>	-

<sup>a</sup>Estimated number of recreational fishing trips (expanded) where the primary species targeted was bluefish, Maine – Florida's East Coast. Source: Scott Steinback, NMFS/NEFSC.

<sup>b</sup>Atlantic coast from Maine through Florida's east coast. Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, November 19, 2009.

<sup>c</sup>Adjusted for RSA.

NA = Data not available.



**Table 7. Total angler trip expenditures ('000 \$) by mode and state in 2006.**

State	Party/Charter	Private/Rental	Shore
CT	3,221	23,762	8,819
DE	4,410	34,451	29,909
ME	5,956	10,461	47,913
MD	28,390	68,413	90,266
MA	34,529	72,934	149,833
NH	7,320	5,966	6,887
NJ	65,462	199,889	92,131
NY	34,468	80,847	35,025
RI	5,267	22,988	32,156
VA	3,994	150,032	38,151
<b>Total</b>	193,017	669,743	531,090

Source: Gentner and Steinback 2008.

**Table 8. Angler effort (number of trips) that targeted bluefish in 2008, Maine through Virginia.**

Mode	Total Angler Effort	Angler Effort Targeting Bluefish <sup>a</sup>	Percent Angler Effort Targeting Bluefish
<b>Party/Charter</b>	1,294,210	81,947	6.33%
<b>Private/Rental</b>	16,603,260	674,593	4.06%
<b>Shore</b>	11,717,430	1,202,548	10.26%
<b>Total</b>	29,614,899	1,959,088	6.62%

<sup>a</sup>Total effort targeting bluefish as primary species.

Source: Scott Steinback NMFS/NEFSC.

**Table 9. Average willingness to pay for a one-day fishing trip, by state.**

State	Mean 1994 (\$'s) <sup>a</sup>	Adjusted to 2008 (\$'s) <sup>b</sup>
ME	6.40	9.30
NH	0.85	1.23
MA	8.38	12.17
RI	4.23	6.15
CT	3.07	4.46
NY	21.58	31.35
NJ	14.12	20.51
DE	1.43	2.08
MD	12.09	17.56
VA	42.33	60.50

<sup>a</sup>Source: Hicks *et al.* 1999.

<sup>b</sup>Prices were adjusted using the Bureau of Labor Statistics Consumer Price Index.

**Table 10. Aggregate willingness to pay for anglers that indicated they were targeting bluefish in 2008.**

State	Total Effort Targeting Bluefish <sup>a</sup>	Willingness to Pay (\$'s)
ME	56,199	522,651
NH	10,313	12,685
MA	279,595	3,402,671
RI	111,218	683,991
CT	204,285	911,111
NY	737,494	23,120,437
NJ	352,864	7,237,241
DE	37,447	77,890
MD	139,448	2,448,707
VA	30,225	1,858,838

<sup>a</sup>Total effort targeting bluefish as primary species.

Source: Scott Steinback NMFS/NEFSC.

**Table 11. Willingness to pay for a one fish increase in the catch rate of small game per trip, Maine through Virginia.**

<b>State</b>	<b>Mean 1994 (\$'s)<sup>a</sup></b>	<b>Adjusted to 2008 (\$'s)<sup>b</sup></b>
<b>ME</b>	3.74	5.43
<b>NH</b>	3.25	4.72
<b>MA</b>	3.09	4.49
<b>RI</b>	3.13	6.46
<b>CT</b>	3.29	6.80
<b>NY</b>	2.43	5.01
<b>NJ</b>	2.69	5.55
<b>DE</b>	3.00	6.19
<b>MD</b>	3.44	7.10
<b>VA</b>	2.46	5.08
<b>All States</b>	2.89	4.20

<sup>a</sup>Source: Hicks *et al.* 1999.

<sup>b</sup>Prices were adjusted using the Bureau of Labor Statistics Consumer Price Index.

**Table 12. Recreational anglers' ratings (mean) of reasons for marine fishing, by subregion.**

	<b>New England</b>			<b>Mid-Atlantic</b>		
<b>Statement</b>	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Very Important</b>	<b>Not Important</b>	<b>Somewhat Important</b>	<b>Very Important</b>
<b>To Spend Quality Time with Friends and Family</b>	4.4%	14.3%	81.3%	3.0%	12.0%	85.0%
<b>To Enjoy Nature and the Outdoors</b>	1.4%	10.1%	88.5%	1.1%	11.6%	87.3%
<b>To Catch Fish to Eat</b>	42.2%	37.4%	20.4%	29.3%	40.1%	30.6%
<b>To Experience the Excitement or Challenge of Sport Fishing</b>	6.2%	24.9%	68.8%	8.4%	26.0%	65.6%
<b>To be Alone</b>	55.0%	27.9%	17.1%	57.7%	25.8%	16.4%
<b>To Relax and Escape from my Daily Routine</b>	3.4%	13.3%	83.3%	2.6%	11.9%	85.5%
<b>To Fish in a Tournament or when Citations are Available</b>	78.6%	14.0%	7.4%	73.4%	17.1%	9.5%

Source: Steinback *et al.*, 1999.

**Table 13. Recreational anglers' ratings (mean) of fishing regulation methods, by subregion.**

	<b>New England</b>		<b>Mid-Atlantic</b>	
<b>Type of Regulation</b>	<b>Support</b>	<b>Oppose</b>	<b>Support</b>	<b>Oppose</b>
<b>Limits on the Minimum Size of Fish You Can Keep</b>	92.5%	7.5%	93.2%	6.8%
<b>Limits on the Number of Fish You Can Keep</b>	91.1%	8.9%	88.3%	11.7%
<b>Limits on the Times of the Year When You Can Keep the Fish You Catch</b>	78.8%	21.2%	77.1%	22.9%
<b>Limits on the Areas You Can Fish</b>	67.9%	32.1%	66.0%	34.0%

Source: Steinback *et al.*, 1999.

**Table 14. Recreational anglers' ratings (mean) of fishing regulation methods, by mode.**

	<b>Party/Charter</b>		<b>Private/Rental</b>		<b>Shore</b>	
<b>Type of Regulation</b>	<b>Support</b>	<b>Oppose</b>	<b>Support</b>	<b>Oppose</b>	<b>Support</b>	<b>Oppose</b>
<b>Limits on the Minimum Size of Fish You Can Keep</b>	92.1%	7.9%	94.4%	5.6%	90.1%	9.9%
<b>Limits on the Number of Fish You Can Keep</b>	87.9%	12.1%	90.0%	10.0%	87.7%	12.3%
<b>Limits on the Times of the Year When You Can Keep the Fish You Catch</b>	79.2%	20.8%	78.3%	21.7%	75.0%	25.0%
<b>Limits on the Areas You Can Fish</b>	74.4%	25.6%	65.9%	34.1%	63.6%	36.4%

Source: Steinback *et al.*, 1999.

**Table 15. Top ports of bluefish landings (in pounds), based on NMFS 2008 dealer data. Since this table includes only the “top ports” (ports where landings of bluefish were > 100,000 lb), it does not include all of the landings for the year. Note: C=Confidential.**

<b>Port<sup>a</sup></b>	<b>Pounds</b>	<b># Vessels</b>
<b>1 NORTH CAROLINA PORT*</b>	C	C
<b>LONG BEACH/BARNEGAT LIGHT, NJ</b>	532,740	31
<b>MONTAUK, NY</b>	289,804	74
<b>GREENPORT, NY</b>	260,281	4
<b>HAMPTON BAY, NY</b>	239,834	42
<b>PT. PLEASANT, NJ</b>	241,244	32
<b>PROVICETOWN, MA</b>	229,652	6
<b>BELFORD, NJ</b>	215,759	21
<b>AMMAGANSETT, NY</b>	185,781	3
<b>POINT JUDITH, RI</b>	180,376	82
<b>LITTLE COMPTON, RI</b>	138,687	19

<sup>a</sup>Ports with less than 3 vessels not reported for confidentiality issues.

\*Top port landings within the state of North Carolina were reported as canvass (summary) data and all landings were attributed to one vessel (unknown permit), and as such, are reported as confidential.

Source: Dealer Weighout Data, as of June 1, 2009.

**Table 16. MRFSS estimates of 2008 recreational harvest and total catch for bluefish.**

State	Harvest (A+B1)		Catch (A+B1+B2)
	Pounds of Fish	Number of Fish	Number of Fish
<b>ME</b>	128,528	24,459	89,579
<b>NH</b>	36,804	6,167	7,692
<b>MA</b>	2,367,551	413,806	1,655,580
<b>RI</b>	1,300,787	337,252	759,936
<b>CT</b>	2,660,732	427,702	1,559,431
<b>NY</b>	4,745,082	1,319,796	3,834,191
<b>NJ</b>	4,627,819	1,296,266	3,047,825
<b>DE</b>	93,166	82,439	328,473
<b>MD</b>	690,315	659,968	2,515,001
<b>VA</b>	394,762	478,600	1,298,847
<b>NC</b>	1,113,321	1,299,111	3,584,138
<b>SC</b>	109,423	149,729	568,183
<b>GA</b>	5,708	7,130	134,966
<b>FL (East Coast)</b>	626,190	425,338	1,034,616

Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, November 12, 2009.

**Table 17. Dealers reporting buying bluefish by state in 2008 (from NMFS commercial dealer landings database) in 2008.**

	CT	FL*	ME	MD	MA	NJ	NY	NC	RI	VA	Other
<b>Number of Dealers</b>	7	3	3	5	48	16	48	20	30	17	5

\*East coast.

Note: States with less than 3 dealers reporting not reported for confidentiality issues.

**Table 18. Comparison of habitat impacts and considerations for selecting alternatives.**

<b>Alternative</b>	<b>Commercial Quota (M lb)<sup>1</sup></b>	<b>Potential Change in CPUE and Habitat Impacts</b>	<b>Considerations for Selecting Alternative</b>
<b><i>Alternative 1 - Preferred (2nd Least Restrictive Comm. Quota)</i></b>	10.051	Quota is slightly higher (5 percent) than the commercial quota under Alternative 3. Based upon species abundance and fishing practices, habitat impacts are likely to remain similar to existing (minimal and temporary).	Commercial quota could provide second largest landings potential. Expected to achieve the fishing mortality target, so significant habitat impacts, increased financial benefit.
<b><i>Alternative 2 - Non-Preferred (Assumes Rebuilt Bluefish Stock; Least Restrictive Comm. Quota)</i></b>	10.185	Quota is slightly higher (7 percent) than the commercial quota under Alternative 3. Based upon species abundance and fishing practices, habitat impacts are likely to remain similar to existing (minimal and temporary).	Commercial landings allocated maximize financial benefit to industry under the assumption that the stock is rebuilt
<b><i>Alternative 3 - Non-Preferred; No Action/ Status Quo TAL (Most Restrictive Comm. Quota)</i></b>	9.534	Habitat impacts associated with bluefish fishery in 2009 were determined to be minimal and would continue to be so in 2010.	Maintains status quo quota in order to maintain stable fishing opportunity, financial benefit to industry

<sup>1</sup> Adjusted for RSA.



**Table 19. The 2010 state-by-state commercial bluefish quota<sup>a</sup> allocations and the 2008 commercial landings by state.**

<b>State</b>	<b>% of Quota</b>	<b>2010 Council- Adjusted Commercial Quota Alternative 1</b>	<b>2010 Council- Adjusted Commercial Quota Alternative 2</b>	<b>2010 Council- Adjusted Commercial Quota Alternative 3</b>	<b>2008 Landings</b>
<b>ME</b>	0.6685	67,192	68,087	63,733	873
<b>NH</b>	0.4145	41,662	42,217	39,517	8,895
<b>MA</b>	6.7167	675,105	684,096	640,352	515,793
<b>RI</b>	6.8081	684,292	693,405	649,066	415,957
<b>CT</b>	1.2663	127,278	128,973	120,726	37,592
<b>NY</b>	10.3851	1,043,821	1,057,722	990,088	1,263,242
<b>NJ</b>	14.8162	1,489,197	1,509,030	1,412,537	1,023,619
<b>DE</b>	1.8782	188,781	191,295	179,063	21,718
<b>MD</b>	3.0018	301,715	305,733	286,184	80,369
<b>VA</b>	11.8795	1,194,025	1,209,927	1,132,560	530,932
<b>NC</b>	32.0608	3,222,476	3,265,392	3,056,591	1,929,097
<b>SC</b>	0.0352	3,538	3,585	3,356	367
<b>GA</b>	0.0095	955	968	906	40
<b>FL</b>	10.0597	1,011,115	1,024,580	959,065	148,428
<b>Total</b>	100	10,051,150	10,185,010	9,533,742	5,976,922

<sup>a</sup>2010 quota adjusted for RSA.

Source: Dealer Weighout Data, as of June 1, 2009, and South Atlantic General Canvass Data as of June 8, 2009.

**Table 20. Threshold analysis of revenues for participating vessels under Alternative 1 (preferred alternative), based on dealer data.**

Quota Alternative 1 (Preferred; 2 <sup>nd</sup> Least Restrictive)		No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (%)						
Total Vessels	Number of Vessels Impacted by ≥ 5% Reduction		<5	5-9	10-19	20-29	30-39	40-49	≥50
626	9	493	124	6	3	0	0	0	0

**Table 21. Review of revenue impacts under quota Alternative 1 (preferred alternative), by home port state, based on dealer data.**

State	Participating Vessels	Number of Vessels Impacted ≥5%	No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (percent)						
				<5	5-9	10-19	20-29	30-39	40-49	≥50
CT	14	0	12	2	0	0	0	0	0	0
DE	3	0	3	0	0	0	0	0	0	0
FL	5	0	5	0	0	0	0	0	0	0
MA	143	0	143	0	0	0	0	0	0	0
MD	12	0	11	1	0	0	0	0	0	0
ME	7	0	5	2	0	0	0	0	0	0
NC	29	0	28	1	0	0	0	0	0	0
NH	14	0	13	1	0	0	0	0	0	0
NJ	86	0	86	0	0	0	0	0	0	0
NY	105	7	6	92	5	2	0	0	0	0
RI	86	0	86	0	0	0	0	0	0	0
VA	17	0	17	0	0	0	0	0	0	0
OTHER <sup>a</sup>	2	0	2	0	0	0	0	0	0	0
NOT KNOWN <sup>b</sup>	103	2	76	25	1	1	0	0	0	0
Total	626	9	493	124	6	3	0	0	0	0

<sup>a</sup>States with fewer than 3 vessels were aggregated.

<sup>b</sup>Vessels have shown landings of bluefish in 2008, but do not hold any commercial Federal permits in 2008. These vessels may be fishing exclusively in state waters fisheries for bluefish, and landings are indicated because of reporting requirements for their other Federal permits or they do not hold a Federal permit to participate in these fisheries any longer.

**Table 22. Federal permits held by the 7 commercial vessels (holding any Federal fishing permit in 2008) projected to have revenue reductions of more than 5% under Alternative 1 (preferred alternative).**

	<b>Northeast Region Permit Status</b>		<b>Number of Vessels</b>	<b>Percent of Permitted Vessels</b>
<b>Commercial</b>	Multispecies	Limited Access	2	29
	Multispecies	Open Access	3	43
	Lobster, Non-trap	Limited Access	1	14
	Lobster, Trap	Limited Access	6	86
	Tilefish	Open Access	6	86
	Summer Flounder	Limited Access	2	29
	Scup	Limited Access	3	43
	Black Sea Bass	Limited Access	3	43
	Squid/Mackerel/Butterfish	Open Access	6	86
	Dogfish	Open Access	6	86
	Monkfish	Open Access	6	86
	Skate	Open Access	6	86
	Atl. Deep-Sea Red Crab	Open Access	5	71
<b>Recreational (Party/Charter)</b>	Multispecies	Open Access	3	43
	Summer Flounder	Open Access	6	86
	Scup	Open Access	5	71
	Black Sea Bass	Open Access	5	71
	Squid/Mackerel/Butterfish	Open Access	5	71
	Lobster, Non-trap	Limited Access	2	29
	Bluefish	Open Access	5	71

**Table 23. Descriptive information for the 7 commercial vessels (holding any Federal fishing permit in 2008) projected to have revenue reductions of more than 5% under Alternative 1 (preferred alternative). Based on 2008 descriptive data from NMFS permit files - No vessel characteristics data are reported for states with fewer than 3 permits.**

	NY
# Permits by Home Port State	7
# Permits by Principal Port State	7
# Permits by Mailing Address State	7
Avg. Length in Feet by Principal Port	36
Avg. GRT by Principal Port	16
Avg. Vessel Horsepower by Principal Port	414
% of Vessels where Home Port State = Principal Port State	100

**Table 24. Distribution of the 7 commercial vessels (holding any Federal fishing permit in 2008) projected to have revenue reductions of more than 5% under Alternative 1 (preferred alternative). Distribution by state, county, and home port, from 2008 NMFS permit files - home ports with fewer than 3 vessels are not reported - only county-level data supplied; counties with fewer than 3 vessels are not reported.**

State	County	Home Port	Number of Vessels
New York	Suffolk <sup>a</sup>	Other	4

<sup>a</sup>The four impacted vessels are distributed among four different ports.

Note: Other counties with impacted vessels were: Nassau (NY) and New York (NY).

**Table 25. Threshold analysis of revenues for participating vessels under non-preferred Alternative 2 quota, based on dealer data.**

Quota Alternative 2 (Least Restrictive)		No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (%)						
Total Vessels	Number of Vessels Impacted by ≥ 5% Reduction		<5	5-9	10-19	20-29	30-39	40-49	≥50
626	7	493	126	4	3	0	0	0	0

**Table 26. Review of revenue impacts under non-preferred Alternative 2 quota, by home port state, based on dealer data.**

State	Participating Vessels	Number of Vessels Impacted ≥5%	No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (percent)						
				<5	5-9	10-19	20-29	30-39	40-49	≥50
CT	14	0	12	2	0	0	0	0	0	0
DE	3	0	3	0	0	0	0	0	0	0
FL	5	0	5	0	0	0	0	0	0	0
MA	143	0	143	0	0	0	0	0	0	0
MD	12	0	11	1	0	0	0	0	0	0
ME	7	0	5	2	0	0	0	0	0	0
NC	29	0	28	1	0	0	0	0	0	0
NH	14	0	13	1	0	0	0	0	0	0
NJ	86	0	86	0	0	0	0	0	0	0
NY	105	6	6	93	4	2	0	0	0	0
RI	86	0	86	0	0	0	0	0	0	0
VA	17	0	17	0	0	0	0	0	0	0
OTHER <sup>a</sup>	2	0	2	0	0	0	0	0	0	0
NOT KNOWN <sup>b</sup>	103	1	76	26	0	1	0	0	0	0
Total	626	7	493	126	4	3	0	0	0	0

<sup>a</sup>States with fewer than 3 vessels were aggregated.

<sup>b</sup>Vessels have shown landings of bluefish in 2008, but do not hold any commercial Federal permits in 2008. These vessels may be fishing exclusively in state waters fisheries for bluefish, and landings are indicated because of reporting requirements for their other Federal permits or they do not hold a Federal permit to participate in these fisheries any longer.

**Table 27. Federal permits held by the 6 commercial vessels (holding any Federal fishing permit in 2008) projected to have revenue reductions of more than 5% under non-preferred Alternative 2 quota.**

	<b>Northeast Region Permit Status</b>		<b>Number of Vessels</b>	<b>Percent of Permitted Vessels</b>
<b>Commercial</b>	Multispecies	Limited Access	2	33
	Multispecies	Open Access	2	33
	Lobster, Non-trap	Limited Access	1	17
	Lobster, Trap	Limited Access	1	17
	Tilefish	Open Access	5	83
	Summer Flounder	Limited Access	2	33
	Scup	Limited Access	2	33
	Black Sea Bass	Limited Access	2	33
	Squid/Mackerel/Butterfish	Open Access	5	83
	Dogfish	Open Access	5	83
	Monkfish	Open Access	5	83
	Skate	Open Access	5	83
	Atl. Deep-Sea Red Crab	Open Access	4	67
<b>Recreational (Party/Charter)</b>	Multispecies	Open Access	2	33
	Summer Flounder	Open Access	5	83
	Scup	Open Access	4	67
	Black Sea Bass	Open Access	4	67
	Squid/Mackerel/Butterfish	Open Access	4	67
	Lobster, Non-trap	Limited Access	1	33
	Bluefish	Open Access	4	67

**Table 28. Descriptive information for the 6 commercial vessels (holding any Federal fishing permit in 2008) projected to have revenue reductions of more than 5% under non-preferred Alternative 2 quota. Based on 2008 descriptive data from NMFS permit files - No vessel characteristics data are reported for states with fewer than 3 permits.**

	NY
# Permits by Home Port State	6
# Permits by Principal Port State	6
# Permits by Mailing Address State	6
Avg. Length in Feet by Principal Port	37
Avg. GRT by Principal Port	17
Avg. Vessel Horsepower by Principal Port	447
% of Vessels where Home Port State = Principal Port State	100



**Table 29. Distribution of the 6 commercial vessels (holding any Federal fishing permit in 2008) projected to have a revenue reductions of more than 5% under non-preferred Alternative 2 quota. Distribution by state, county, and home port, from 2008 NMFS permit files - home ports with fewer than 3 vessels are not reported - only county-level data supplied; counties with fewer than 3 vessels are not reported.**

State	County	Home Port	Number of Vessels
New York	Suffolk <sup>a</sup>	Other	4

<sup>a</sup>The four impacted vessels are distributed among three different ports.

Note: Other counties with impacted vessels were: Nassau (NY).

**Table 30. Threshold analysis of revenues for participating vessels under non-preferred Alternative 3 quota (status quo), based on dealer data.**

Quota Alternative 3 (Status Quo; Most Restrictive)		No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (%)						
Total Vessels	Number of Vessels Impacted by ≥ 5% Reduction		<5	5-9	10-19	20-29	30-39	40-49	≥50
626	12	493	121	8	1	3	0	0	0

**Table 31. Review of revenue impacts under non-preferred Alternative 3 quota (status quo), by home port state, based on dealer data.**

State	Participating Vessels	Number of Vessels Impacted ≥5%	No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (percent)						
				<5	5-9	10-19	20-29	30-39	40-49	≥50
CT	14	0	12	2	0	0	0	0	0	0
DE	3	0	3	0	0	0	0	0	0	0
FL	5	0	5	0	0	0	0	0	0	0
MA	143	0	143	0	0	0	0	0	0	0
MD	12	0	11	1	0	0	0	0	0	0
ME	7	0	5	2	0	0	0	0	0	0
NC	29	0	28	1	0	0	0	0	0	0
NH	14	0	13	1	0	0	0	0	0	0
NJ	86	0	86	0	0	0	0	0	0	0
NY	105	8	6	91	5	1	2	0	0	0
RI	86	0	86	0	0	0	0	0	0	0
VA	17	0	17	0	0	0	0	0	0	0
OTHER <sup>a</sup>	2	0	2	0	0	0	0	0	0	0

NOT KNOWN <sup>b</sup>	103	4	76	23	3	0	1	0	0	0
Total	626	12	493	121	8	1	3	0	0	0

<sup>a</sup>States with fewer than 3 vessels were aggregated.

<sup>b</sup>Vessels have shown landings of bluefish in 2008, but do not hold any commercial Federal permits in 2008. These vessels may be fishing exclusively in state waters fisheries for bluefish, and landings are indicated because of reporting requirements for their other Federal permits or they do not hold a Federal permit to participate in these fisheries any longer.

**Table 32. Federal permits held by the 8 commercial vessels (holding any Federal fishing permit in 2008) projected to have revenue reductions of more than 5% under Alternative 3 (status quo/no action alternative).**

	<b>Northeast Region Permit Status</b>		<b>Number of Vessels</b>	<b>Percent of Permitted Vessels</b>
<b>Commercial</b>	Multispecies	Limited Access	2	25
	Multispecies	Open Access	3	38
	Lobster, Non-trap	Limited Access	1	13
	Lobster, Trap	Limited Access	1	13
	Tilefish	Open Access	7	88
	Summer Flounder	Limited Access	2	25
	Scup	Limited Access	3	38
	Black Sea Bass	Limited Access	3	38
	Squid/Mackerel/Butterfish	Open Access	7	88
	Dogfish	Open Access	7	88
	Monkfish	Limited Access	1	13
	Monkfish	Open Access	6	75
	Skate	Open Access	7	88
	Atl. Deep-Sea Red Crab	Open Access	6	75
<b>Recreational (Party/Charter)</b>	Multispecies	Open Access	3	38
	Summer Flounder	Open Access	6	75
	Scup	Open Access	5	63
	Black Sea Bass	Open Access	5	63
	Squid/Mackerel/Butterfish	Open Access	5	63
	Lobster, Non-trap	Limited Access	1	13
	Bluefish	Open Access	5	63

**Table 33. Descriptive information for the 8 commercial vessels (holding any Federal fishing permit in 2008) projected to have revenue reductions of more than 5% under Alternative 3 (status quo/no action alternative). Based on 2008 descriptive data from NMFS permit files - No vessel characteristics data are reported for states with fewer than 3 permits.**

	NY
# Permits by Home Port State	8
# Permits by Principal Port State	8
# Permits by Mailing Address State	8
Avg. Length in Feet by Principal Port	37
Avg. GRT by Principal Port	17
Avg. Vessel Horsepower by Principal Port	409
% of Vessels where Home Port State = Principal Port State	100

**Table 34. Distribution of the 8 commercial vessels (holding any Federal fishing permit in 2008) projected to have revenue reductions of more than 5% under Alternative 3 (status quo/no action alternative). Distribution by state, county, and home port, from 2008 NMFS permit files - home ports with fewer than 3 vessels are not reported - only county-level data supplied; counties with fewer than 3 vessels are not reported.**

State	County	Home Port	Number of Vessels
New York	Suffolk <sup>a</sup>	Other	6

<sup>a</sup>The four impacted vessels are distributed among four different ports.

Note: Other counties with impacted vessels were: Nassau (NY) and New York (NY).

**Table 35. Percentage changes associated with allowable commercial landings for various quota alternatives in 2010 (Council-adjusted quota for RSA) relative to 2008 landings by state.**

<b>State</b>	<b>2010 Commercial Quota Alternative 1</b>	<b>2010 Commercial Quota Alternative 2</b>	<b>2010 Commercial Quota Alternative 3</b>
<b>ME</b>	7,597%	7,699%	7,200%
<b>NH</b>	368%	375%	344%
<b>MA</b>	31%	33%	24%
<b>RI</b>	65%	67%	56%
<b>CT</b>	239%	243%	221%
<b>NY</b>	-17%	-16%	-22%
<b>NJ</b>	45%	47%	38%
<b>DE</b>	769%	781%	724%
<b>MD</b>	275%	280%	256%
<b>VA</b>	125%	128%	113%
<b>NC</b>	67%	69%	58%
<b>SC</b>	864%	877%	814%
<b>GA</b>	2,287%	2,319%	2,164%
<b>FL</b>	581%	590%	546%
<b>Total</b>	68%	70%	60%

**Table 36. Counties identified as having  $\geq 4$  commercial vessels showing revenue reductions of 5% or more as a consequence of the most restrictive commercial quota alternative (non-preferred Alternative 3) evaluated in this document (section 3.1 the RIR/IRFA).**

State	County <sup>a</sup>	Population <sup>b</sup>	Employment <sup>c</sup>	Total Personal Income <sup>d</sup> (million of \$'s)	Commercial Fishing Employment	Percent of Personal Income Derived From Comm. Fishing	Fresh and Frozen Seafood Processing Employment	Percent of Personal Income derived From Seafood Processing
NY	Suffolk	1,438,973	752,834	52,116.44	1,111	.01%	0	0%
<p>a = Data obtained from the Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive West, Suite 140, Stillwater, MN 55082, www.implan.com, 2001.</p> <p>b = Year-round population.</p> <p>c = Includes both full-time and part-time workers.</p> <p>d = Includes employee compensation (wage and salary payments and benefits paid by employers) and proprietary income (payments received by self-employed individuals as income).</p> <p>Source: Scott Steinback (NMFS/NEFSC).</p> <p>Note: The PA module was not available to conduct the county profile for that state. However, it is expected that overall commercial fishing employment; percent of personal income derived from commercial fishing; fresh and frozen seafood processing employment percent of personal; and income derived from seafood processing are expected to be low and not higher than the highest values presented in this table due to the small amount of marine commercial fishing activity in that state.</p>								